WASHINGTON STATE PARKS & RECREATION COMMISSION

APPROVED FOR CONSTRUCTION

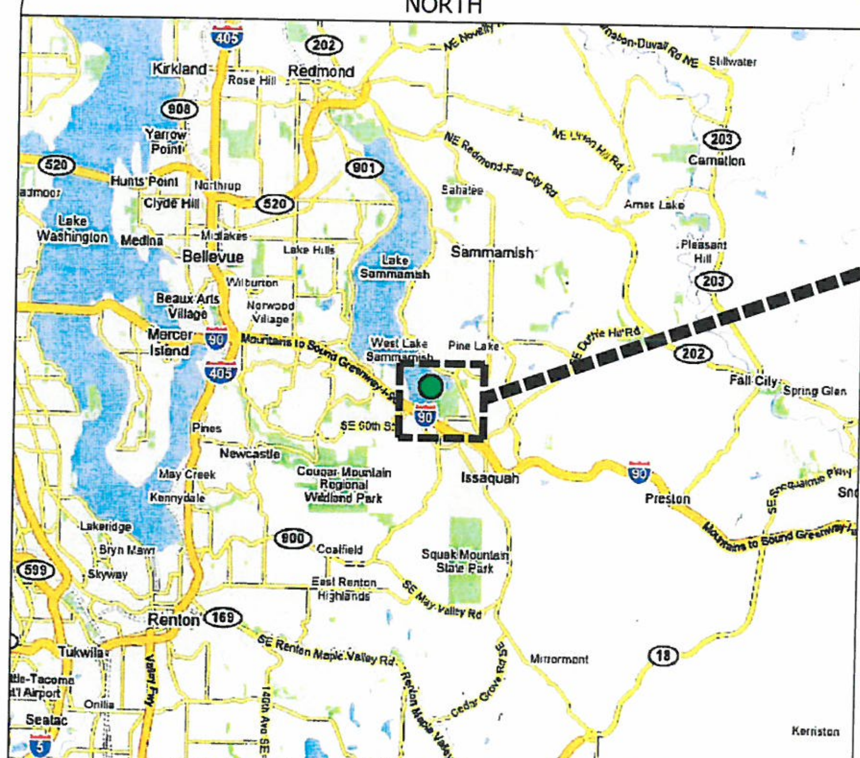
REGION MANAGER	*date*
PARKS DEVELOPMENT REGION MANAGER	*date*
CAPITAL DEVELOPMENT PROGRAM MANAGER	*date*

Park Manager: Nikki Fields

LAKE SAMMAMISH STATE PARK-
BEACH RESTORATION PROJECT

VICINITY MAP

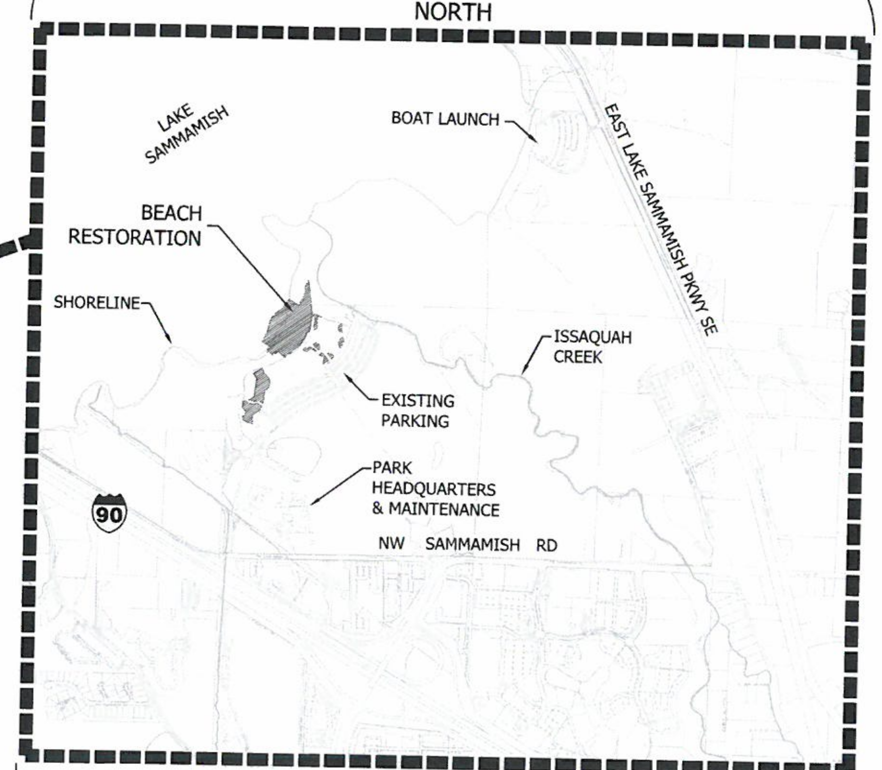
NORTH



47.56129 / -122.06198

PROJECT LOCATION

NORTH



2000 NW SAMMAMISH ROAD,
ISSAQUAH, WA 98027
SEC-20 T-24-N R-6-E
KING COUNTY TAX PARCEL NUMBER 2024069002

Sheet Index

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SH015-0001

WASHINGTON STATE PARKS & RECREATION COMMISSION

LUCINDA S. WHALEY, CHAIR

PATRICIA T. LANZ, VICE CHAIR — MARK O. BROWN

STEVE S. MILNER, SECRETARY — DOUGLAS D. PETERS

RODGER SCHMITT — KEN BOUNDS

DON HOCH, DIRECTOR

APPROVED FOR CONSTRUCTION

REGION MANAGER *date*

PARKS DEVELOPMENT REGION MANAGER *date*

CAPITAL DEVELOPMENT PROGRAM MANAGER *date*

LAKE SAMMAMISH STATE PARK-
BEACH RESTORATION PROJECT

Park Manager: Nikki Fields

Project Summary

THE WASHINGTON STATE PARKS AND RECREATION COMMISSION PROPOSES PARK IMPROVEMENTS TO INCREASE SWIMMER SAFETY, ENHANCE RECREATIONAL AND EDUCATIONAL OPPORTUNITIES, AND IMPROVE USER ACCESS AT SUNSET BEACH IN LAKE SAMMAMISH STATE PARK. THESE IMPROVEMENTS ARE PART OF A MASTER PLAN DEVELOPED IN 2007 THAT PRODUCED TO GUIDE FUTURE RE-DEVELOPMENT AND RESTORATION AT LAKE SAMMAMISH STATE PARK. BASED ON COMMUNITY INPUT AND PROJECT GOALS, THE MASTER PLAN SOUGHT TO STRIKE A BALANCE BETWEEN IMPROVING SAFETY FOR PARK USERS, ECOLOGICAL PRESERVATION AND LOCAL RESTORATION NEEDS. THE CURRENT PHASE THAT IS BEING PROPOSED, THE LAKE SAMMAMISH STATE PARK BEACH RESTORATION PROJECT, ACHIEVES THAT BALANCE.

Property Owner

PROPERTY OWNER: WASHINGTON STATE PARKS & RECREATION COMMISSION

OWNER MAILING ADDRESS: RESOURCES DEVELOPMENT
P.O. BOX 42668
OLYMPIA, WASHINGTON
98504-2650

OWNER REPRESENTATIVE: NIKKI FIELDS
PARKS PLANNER
T: 360.902.8658
F: 360.586.0207

Property Notes

PROPERTY ADDRESS : 2000 NW SAMMAMISH RD
ISSAQUAH, WASHINGTON 98029

PARCEL TAX NUMBER(S) : 2024069002

LEGAL DESCRIPTION : ***NE 1/4 TGW SH LDS ADJ LESS CO RD LESS DD #4 TGW E 1210 FT OF GL 3 TGW SH LDS ADJ***

Parcel Information

ZONING:	*R-4 (4 DU PER ACRE)*
PROPERTY NAME:	*LAKE SAMMAMISH STATE PARK*
PROPERTY TYPE:	*C-COMMERCIAL*
PRESENT USE:	*PARK, PUBLIC*
LOT AREA:	*7,669,815 SQ. FT. (176.07 ACRES)*
Q-S-T-R:	*NE-20-24-6*
WATER SYSTEM:	*WATER DISTRICT*
SEWER SYSTEM:	*PUBLIC*
ACCESS:	*PUBLIC*
STREET SURFACE:	*PAVED*

Project Team

LANDSCAPE ARCHITECTURE: ROBERT W. DROLL LANDSCAPE ARCHITECTS
ROBERT W. DROLL
4405 7TH AVENUE SE, SUITE 203
LACEY, WA 98503
T: 360.456.3803
F: 360.493.2063

ENVIRONMENTAL: THE WATERSHED COMPANY
JENNIFER CREVELING
750 SIXTH STREET SOUTH
KIRKLAND, WA 98033
T: 425.822.5242
F: 425.827.8136

Site Information

PROJECT SITE AREA (LIMIT OF WORK): 335,600 SF

IMPERVIOUS SURFACE TOTALS:

IMPERVIOUS SURFACE	AREA
EXISTING TO BE DEMOLISHED	2,500 SF
PROPOSED	12,500 SF
TOTAL CHANGE	+10,000 SF

REVIEW SET

SURVEY LEGEND

- ASPHALTIC CONCRETE
- EDGE OF ASPHALTIC CONCRETE
- ASPHALT WALK
- BRICK RETAINING WALL
- BRICK SURFACE
- BUILDING LINE
- CABLE TELEVISION
- CANOPY
- CONCRETE CURB
- CONCRETE DRIVE
- CHAIN LINK FENCE
- CLEANOUT
- CENTER OF CHANNEL
- CONIFEROUS TREE
- CONCRETE PAD
- CONCRETE SURFACE
- CONCRETE RETAINING WALL
- CONCRETE WALK
- DECIDUOUS TREE
- DUCTILE IRON
- EASEMENT AREA
- ELECTRICAL CONDUIT (BURIED)
- ELECTRIC METER
- FOUND SURVEY MONUMENT
- FENCE LINE (CHAIN LINK)
- FIRE HYDRANT
- FIBER OPTICS
- GAS LINE
- GAS METER
- GAS VALVE
- IRON PIPE
- JUNCTION BOX
- LIGHT POLE (ORNAMENTAL)
- MANHOLE
- OVERHEAD
- PAINTED UTILITY LOCATION
- POWER METER
- POWER POLE
- COMBINED SEWER
- PIPE STORM DRAIN
- POLYVINYL CHLORIDE
- RECORD DATA
- SANITARY SIDE SEWER
- SIGN
- STORM DRAIN
- TELEPHONE CONDUIT (BURIED)
- TELEPHONE MANHOLE
- TRAFFIC FLOW
- TRAFFIC LIGHT
- TRAFFIC SIGNAL
- WATER LINE
- WATER MANHOLE
- WATER METER
- WATER VALVE
- WOOD FENCE

LAKE LEVEL (JAN. 2014)		
C.O.E.	NAVD 88	NGVD 29
34.7	32.0	27.9

THIS SURVEY WAS PERFORMED BY:

BUSH, ROED & HITCHINGS, INC.
CIVIL ENGINEERS & LAND SURVEYORS
2009 MINOR AVE. EAST
SEATTLE, Washington
98102-3513
(206) 323-4144
1-800-935-0508
FAX# (206) 323-7135
WEBSITE: BRHINC.COM

BUSH, ROED & HITCHINGS, INC. CORPORATE SEAL 1969 WASHINGTON

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CAD NO. 12003A BEACH 1.2 Ex Cond.dwg

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DESIGNED		1-13-2015
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CHECKED (FIELD)		
CHECKED (HDQTS.)		

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

Robert W. Droll
Certificate No. 530
PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

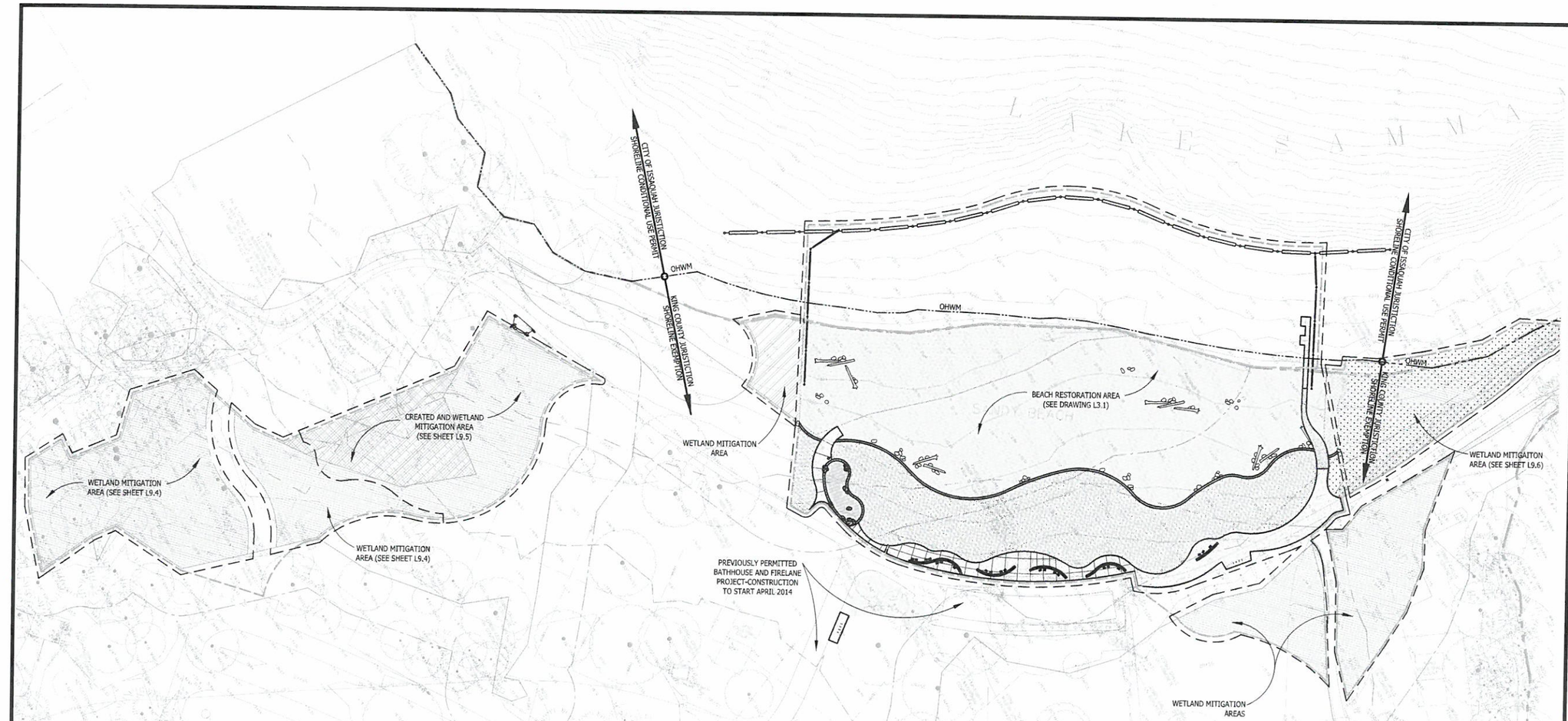
LAKE SAMMAMISH BEACH RESTORATION

EXISTING CONDITIONS L1.2

SCALE 60' 0 120'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION



SITE PLAN LEGEND

- LIMIT OF WORK
- BOULDERS AND WOODY DEBRIS
- FLOATING BREAKWATER
- FLOATING BREAKWATER
- SEED MIX A
- SAND BEACH RESTORATION AREA
- LAKEBED RESTORATION AREA
- WETLAND MITIGATION AREA

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CAUTION!!! OVERHEAD AND UNDERGROUND UTILITIES

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

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4405 7th Avenue SE, Suite 203
Lacey, WA 98503
(360) 456-3813
E-MAIL bob@rwdroll.com

CAD NO. 12003A BEACH 3.1 Site Plan.dwg

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

OVERALL SITE PLAN
L3.0

SCALE 60' 0 120'

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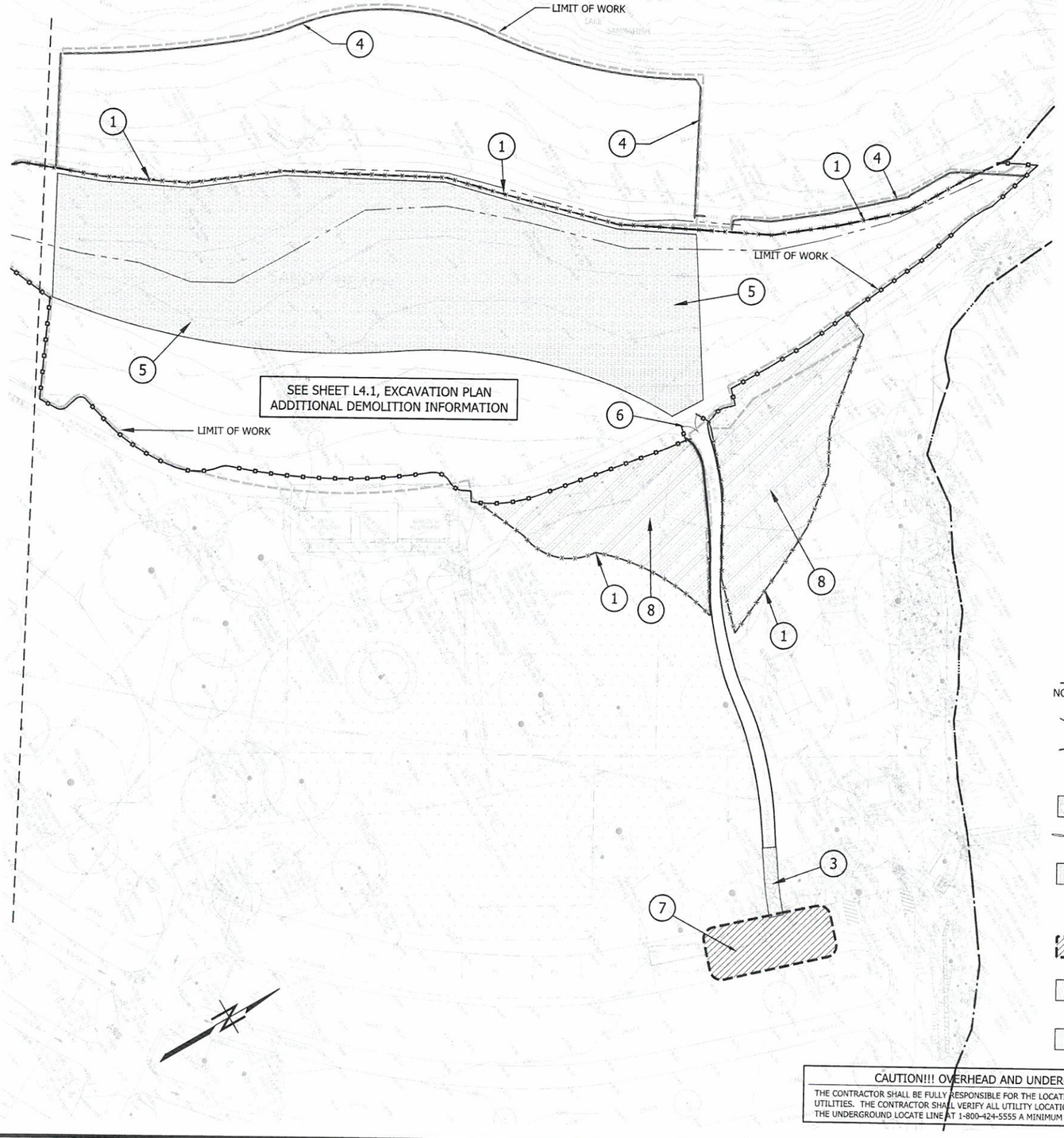

TESC NOTES

1. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP), COMMENSURATE WITH THE SIZE OF THIS PROJECT, SHALL BE SUBMITTED TO THE O.R. PRIOR TO THE START OF CONSTRUCTION AND CARRIED OUT TO PREVENT POLLUTION CAUSED BY SURVEYING OR CONSTRUCTION OPERATIONS.
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4. ANY STOCKPILED MATERIAL SHALL BE COVERED WITH 6 MIL. POLYETHYLENE SHEATHING AND SECURED WITH SAND BAGS AND ROPES AT THE END OF EVERY DAILY WORK PERIOD AND DURING RAIN EVENTS.
5. ALL HEAVY EQUIPMENT WITH HYDRAULIC LINES SHALL BE FILLED WITH VEGETABLE OIL FOR THE DURATION OF THE PROJECT TO MINIMIZE IMPACTS OF POTENTIAL SPILLS AND LEAKS.
6. CONTRACTOR SHALL PREPARE AND SUBMIT A SPILL CONTAINMENT PLAN THAT INCLUDES BEST MANAGEMENT PRACTICES TO ADDRESS THE PREVENTION AND CLEANUP OF ACCIDENTAL SPILLS FOR THE O.R.'S REVIEW AND COMMENT PRIOR TO THE PRECONSTRUCTION MEETING. THE SPILL CONTAINMENT SYSTEM SHALL BE ONSITE AT ALL TIMES THROUGHOUT CONSTRUCTION. EQUIPMENT THAT IS STORED ONSITE OVERNIGHT WILL BE SURROUNDED BY STRAW WADDLES AND ABSORBENT PADS WILL BE PLACED BENEATH ANY AREAS THAT ARE AT RISK FOR LEAKAGE.
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TESC LEGEND

NOTE	SYMBOL	KEY
	1	INSTALL SILT FENCE AROUND THE LIMITS OF CONSTRUCTION TO THE WATER'S EDGE PER DETAIL 1, SHEET L2.2.
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	3	INSTALL QUARRY SPALL CONSTRUCTION ENTRANCE PER DETAIL 2, SHEET L2.2.
	4	INSTALL TYPE II TURBIDITY CURTAIN TO AROUND THE LIMITS OF IN-WATER CONSTRUCTION WORK PER DETAIL 3, SHEET L2.2.
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	8	CLEAR AND GRUB TO 6" DEPTH AND DISPOSE OF AT LEGAL SITE. PROTECT AND PRESERVE ALL EXISTING TREES.
	9	RESTORE AREAS TO PRE-EXISTING CONDITION OR BETTER. SEE DRAWINGS L8.1 AND L8.2 FOR ADDITIONAL INFORMATION.

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E-MAIL bob@rwdroll.com

CAD NO. 12003A BEACH 2.1 Demo.dwg

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Certificate No. 530
PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

TESC PLAN-NORTH
L2.0

SCALE 50' 0 100'

FILE NO.

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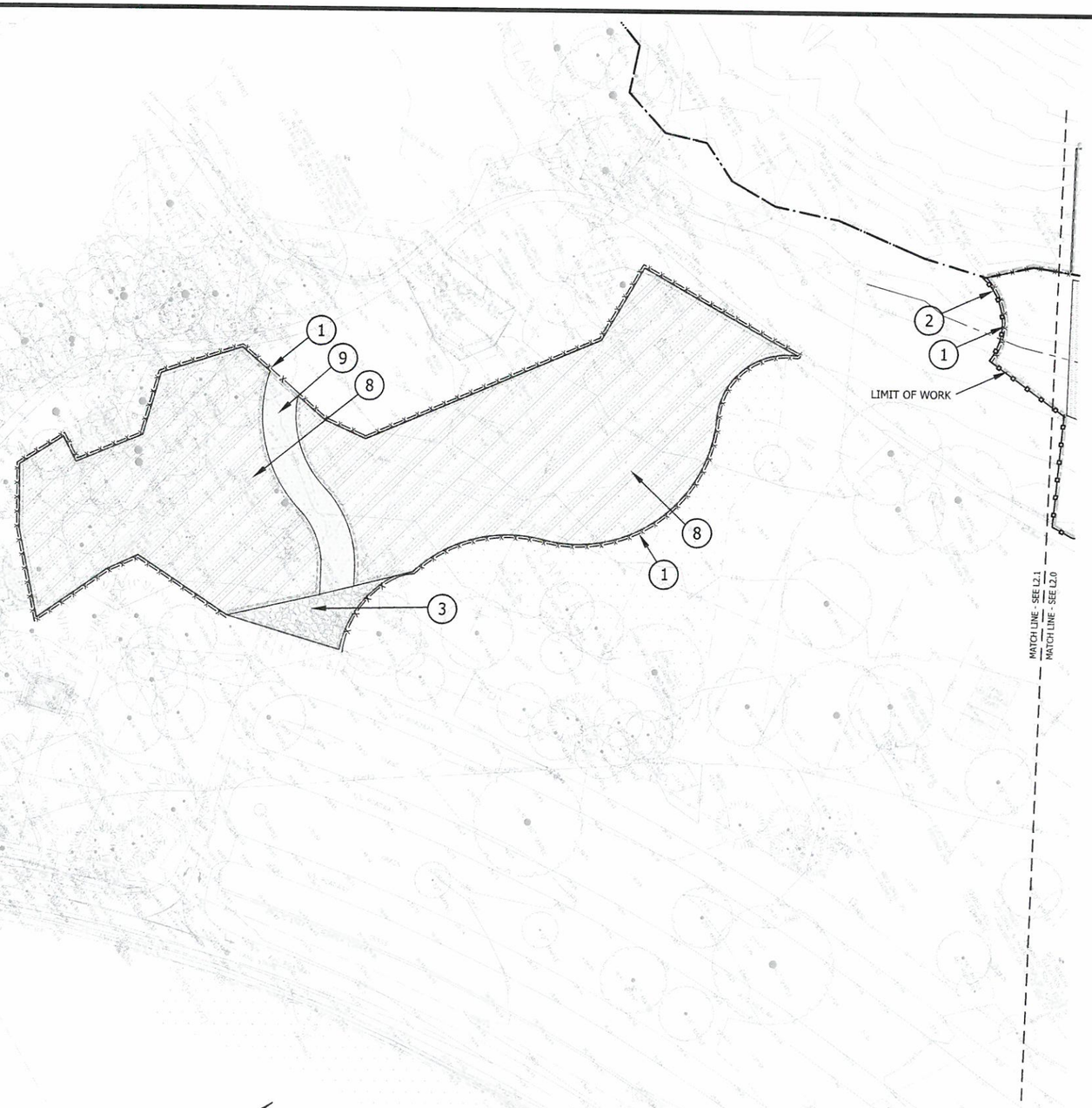

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

TESC PLAN-SOUTH
L2.1

SCALE 50' 0 100'

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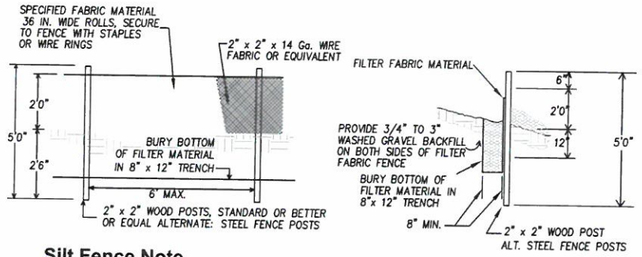
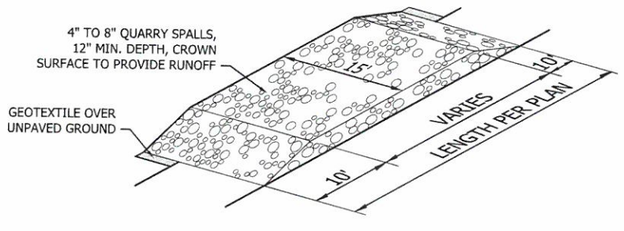


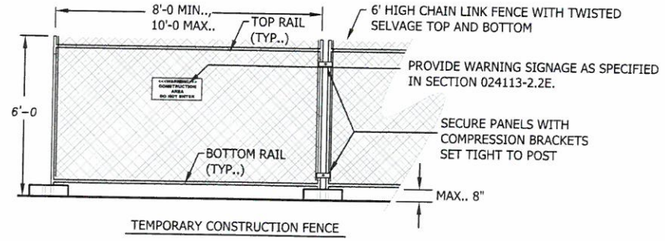
Silt Fence Note

1. LENGTH OF SILT FENCE IS BASED UPON SURVEY INFORMATION. CONTRACTOR SHALL ADJUST LENGTH IF DIRECTED BY PROJECT ENGINEER..

1/L2.2 *SILT FENCE INSTALLATION TYPICAL*
SCALE: NTS



2/L2.2 *QUARRY SPALL CONSTRUCTION ENTRANCE*
SCALE: NTS



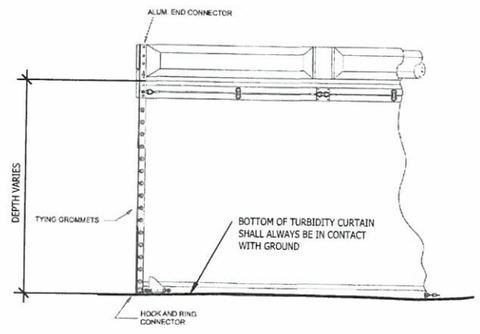
TEMPORARY CONSTRUCTION FENCE

NOTES:
1. TEMPORARY SECURITY FENCING SHALL BE INSTALLED ON THE ENTIRE LIMIT OF WORK AND IN LOCATIONS SHOWN ON PLANS PRIOR TO CONSTRUCTION

4/L2.2 *TEMPORARY CONSTRUCTION FENCE*
SCALE: NTS

ELASTEC AmericanMarine Innovative Environmental Products

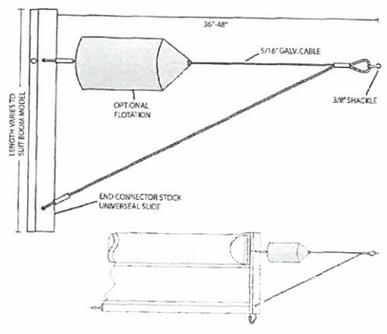
RuffWater Screen



3/L2.2 *TURBIDITY CURTAIN DETAIL*
SCALE: NTS

ELASTEC AmericanMarine Innovative Environmental Products

Tow Bridle With Float



Assembled tow bridles with floats are provided for handling the containment boom or silt curtain in the water. Prior to deployment, the connector on the tow bridle should be mated to the end connector on the boom and secured with a toggle pin. The shackle on the tow bridle will accept a line up to 3/4" in diameter.

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Landscape Architect, PS
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Lacey, WA 98503
(360) 456-3813
E-MAIL bob@rwdroll.com

CAD NO. 12003A BEACH 2.1 Demo.dwg

NO.	REVISIONS	INT.	APP.	DATE

ACTION	BY	DATE
DESIGNED		1-13-2015
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STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

Robert W. Droll
Certificate No. 530
PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

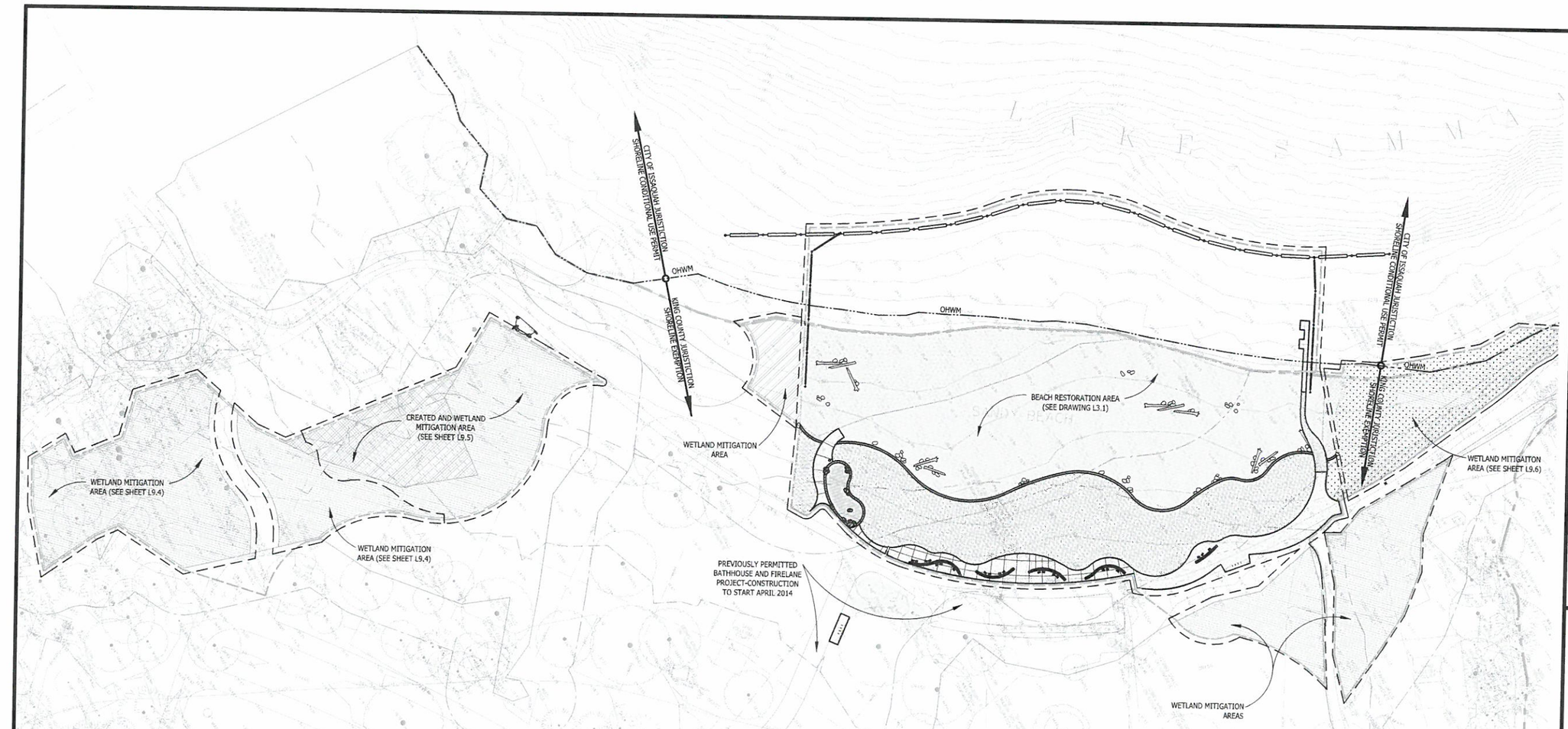
LAKE SAMMAMISH BEACH RESTORATION

TESC DETAILS
L2.2

SCALE
20'
0 40'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION



SITE PLAN LEGEND

- LIMIT OF WORK
- BOULDERS AND WOODY DEBRIS
- FLOATING BREAKWATER
- FLOATING BREAKWATER
- SEED MIX A
- SAND BEACH RESTORATION AREA
- LAKEBED RESTORATION AREA
- WETLAND MITIGATION AREA

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CAUTION!!! OVERHEAD AND UNDERGROUND UTILITIES

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

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CAD NO. 12003A BEACH 3.1 Site Plan.dwg

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STATE OF WASHINGTON
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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

OVERALL SITE PLAN L3.0

SCALE 60' 0 120'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION

SITE PLAN LEGEND

- LIMIT OF WORK
- BOULDERS AND WOODY DEBRIS
- FLOATING BREAKWATER
- FLOATING BREAKWATER
- SEED MIX A
- SAND BEACH RESTORATION AREA
- LAKEBED RESTORATION AREA
- WETLAND MITIGATION AREA

LAKE SAMMAMISH

LIMIT OF WORK

FLOATING BREAKWATER

LIMIT OF WORK

LAKEBED RESTORATION AREA

FLOATING BREAKWATER

AVERAGE LOW WATER=29.4±

OWHM 32.07 NAVD88

LAKE LEVEL AT TIME OF SURVEY= 31.5' (DECEMBER 2007)

OHWM=32.07±

APPR. HIGH WATER=32.37'

WETLAND D

CITY OF ISSAQUAH CONDITIONAL USE PERMIT SHORELINE ADMINISTRATION

KING COUNTY SHORELINE ADMINISTRATION

OHWM

150' WETLAND BUFFER

ENLARGED RAMP PLAN (1/L7.1)

LIMIT OF WORK

WETLAND MITIGATION AREA SEE GRADING PLAN (SHEET L5.1) AND PLANTING PLAN (SHEET L9.6)

SAND BEACH RESTORATION AREA

(2/L5.3) TRASH RECEPTACLE

CEMENT CONCRETE PAVING TYPE B (4/L7.1)

(4/L5.1) BARRIER CURB

(1/L5.4) ENLARGED SAND BOX PLAN

CEMENT CONCRETE PAVING TYPE A (1/L5.1)

TRASH RECEPTACLE (2/L5.3)

3' BENCH, TYP. (1/L5.3)

(1/L8.1) SEED MIX A

18" HT. CONCRETE SEATWALL, TYP. (1/L5.2)

TRASH RECEPTACLE (2/L5.3)

(3/L5.3) BIKE RACK

PREVIOUSLY PERMITTED BATHHOUSE AND FIRELANE PROJECT-CONSTRUCTION TO START APRIL 2014

(3/L5.3) BIKE RACK

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

BEACH RESTORATION SITE PLAN L3.1

SCALE 30' 0 60'

FILE NO.

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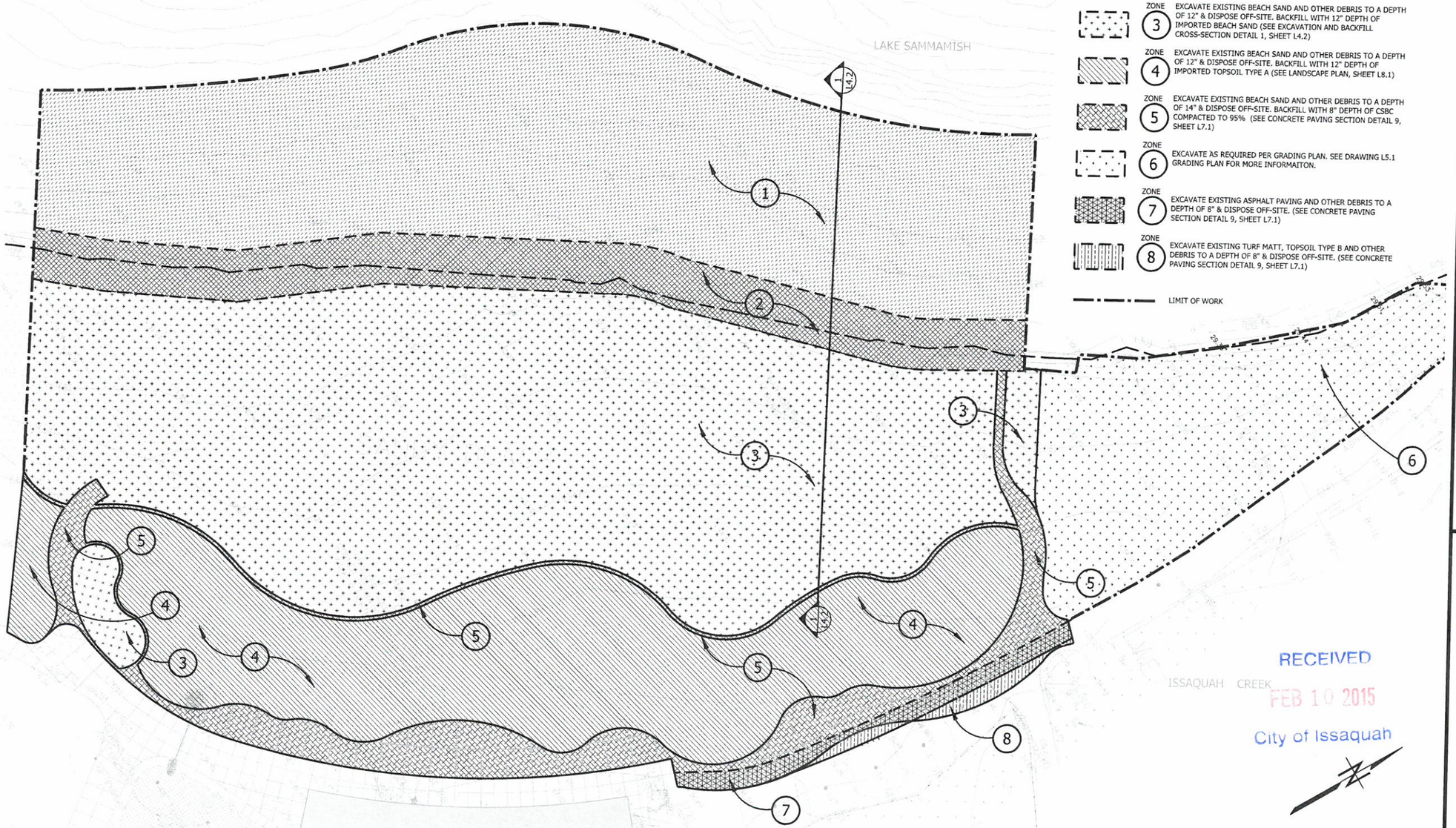
EXCAVATION AND BACKFILL LEGEND

SYMBOL	KEY NOTE
	ZONE 1 — REMOVE LAKEBED VEGETATION & OTHER LAKEBED ORGANICS & DISPOSE OFF-SITE. REMOVE & RELOCATE UNDERWATER LOGS. RELOCATE FISH WITHIN THE LIMITS OF IN-WATER WORK TO AN AREA OF LAKE SAMMAMISH OUTSIDE THE LIMITS OF WORK. BACKFILL WITH 12" ± DEPTH OF GRANULITHIC AGGREGATE (SEE EXCAVATION AND BACKFILL CROSS-SECTION DETAIL 1, SHEET L4.2)
	ZONE 2 — EXCAVATE EXISTING BEACH SAND AND VEGETATION TO A DEPTH OF 36" & DISPOSE OFF SITE. BACKFILL WITH 12" DEPTH 4"-8" DEPTH QUARRY SPALLS, 6" DEPTH PERMEABLE BALLAST, AND 18" OF GRANULITHIC AGGREGATE (SEE EXCAVATION AND BACKFILL CROSS-SECTION DETAIL 1, SHEET L4.2)
	ZONE 3 — EXCAVATE EXISTING BEACH SAND AND OTHER DEBRIS TO A DEPTH OF 12" & DISPOSE OFF-SITE. BACKFILL WITH 12" DEPTH OF IMPORTED BEACH SAND (SEE EXCAVATION AND BACKFILL CROSS-SECTION DETAIL 1, SHEET L4.2)
	ZONE 4 — EXCAVATE EXISTING BEACH SAND AND OTHER DEBRIS TO A DEPTH OF 12" & DISPOSE OFF-SITE. BACKFILL WITH 12" DEPTH OF IMPORTED TOPSOIL TYPE A (SEE LANDSCAPE PLAN, SHEET L8.1)
	ZONE 5 — EXCAVATE EXISTING BEACH SAND AND OTHER DEBRIS TO A DEPTH OF 14" & DISPOSE OFF-SITE. BACKFILL WITH 8" DEPTH OF CSBC COMPACTED TO 95% (SEE CONCRETE PAVING SECTION DETAIL 9, SHEET L7.1)
	ZONE 6 — EXCAVATE AS REQUIRED PER GRADING PLAN. SEE DRAWING L5.1 GRADING PLAN FOR MORE INFORMAITON.
	ZONE 7 — EXCAVATE EXISTING ASPHALT PAVING AND OTHER DEBRIS TO A DEPTH OF 8" & DISPOSE OFF-SITE. (SEE CONCRETE PAVING SECTION DETAIL 9, SHEET L7.1)
	ZONE 8 — EXCAVATE EXISTING TURF MATT, TOPSOIL TYPE B AND OTHER DEBRIS TO A DEPTH OF 8" & DISPOSE OFF-SITE. (SEE CONCRETE PAVING SECTION DETAIL 9, SHEET L7.1)
	LIMIT OF WORK



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CAD NO. 12003A BEACH L4.1 Excavation Plan.dwg

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LAKE SAMMAMISH STATE PARK

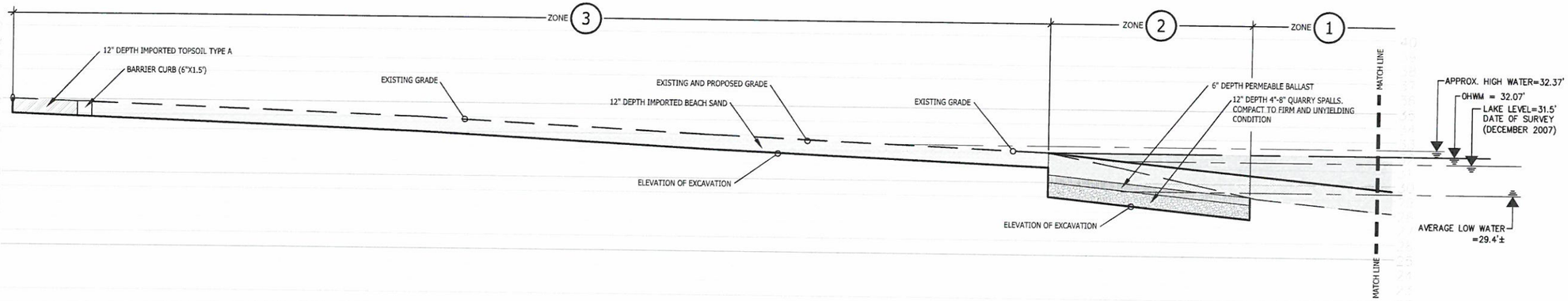
LAKE SAMMAMISH BEACH RESTORATION

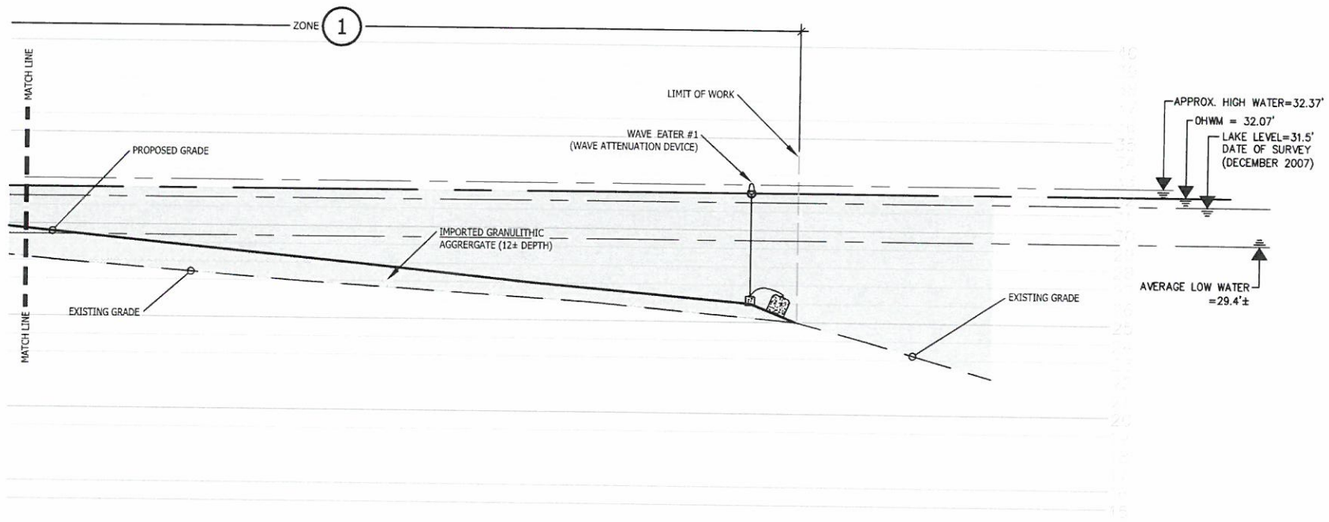
EXCAVATION PLAN
L4.1

SCALE 0 20' 60'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION





1/L4.2 EXCAVATION AND BACKFILL CROSS-SECTION D

HORIZONTAL SCALE: 1/8"=1'-0"
VERTITAL SCALE: 1/4"=1'-0"

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CAD NO. 12003A BEACH 4.1 Excavation Sections.dwg

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

EXCAVATION AND BACKFILL CROSS-SECTION L4.2

SCALE

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION

LAKE SAMMAMISH

OWHM 32.07 NAVD88

WETLAND D

SAND BEACH RESTORATION AREA

LIMIT OF WORK

29.87' +
30.07' +
30.54' +
30.74' +

PREVIOUSLY PERMITTED BATHHOUSE AND FIREPIT PROJECT-CONSTRUCTION TO START APRIL 2014

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CAD NO. 12003A BEACH 4.3 Grading Plan.dwg

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Robert W. Droll
Certificate No. 830
PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

GRADING PLAN L4.3

SCALE 30' 0 60'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION

SITE AND MATERIALS PLAN LEGEND

- LIMIT OF WORK
- BOULDERS AND WOODY DEBRIS
- FLOATING BREAKWATER
- FLOATING BREAKWATER
- SEED MIX A
- SAND BEACH RESTORATION AREA
- LAKEBED RESTORATION AREA
- WETLAND MITIGATION AREA

LAKE SAMMAMISH

LIMIT OF WORK

LAKE SAMMAMISH

FLOATING BREAKWATER

LIMIT OF WORK

LAKEBED RESTORATION AREA

FLOATING BREAKWATER

OWHM 32.07 NAVD88

AVERAGE LOW WATER=29.4±

LAKE LEVEL AT TIME OF SURVEY= 31.5' (DECEMBER 2007)

OHWM=32.07±

APPR. HIGH WATER=32.37'

WETLAND D

ENLARGED RAMP PLAN (1 / L7.1)

LIMIT OF WORK

WETLAND D

WETLAND MITIGATION AREA SEE GRADING PLAN (SHEET L5.1) AND PLANTING PLAN (SHEET L9.6)

SAND BEACH RESTORATION AREA

(2 / L5.3) TRASH RECEPTACLE

CEMENT CONCRETE PAVING TYPE B (4 / L7.1)

(4 / L5.1) BARRIER CURB

(1 / L5.4) ENLARGED SAND BOX PLAN

CEMENT CONCRETE PAVING TYPE A (1 / L5.1)

TRASH RECEPTACLE (2 / L5.3)

3' BENCH, TYP. (1 / L5.3)

(1 / L8.1) SEED MIX A

18" HT. CONCRETE SEATWALL, TYP. (1 / L5.2)

TRASH RECEPTACLE (2 / L5.3)

(3 / L5.3) BIKE RACK

PREVIOUSLY PERMITTED BATHHOUSE AND FIRELANE PROJECT-CONSTRUCTION TO START APRIL 2014

(3 / L5.3) BIKE RACK

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CAD NO. 12003A BEACH 5.0 Site Plan.dwg

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

SITE AND MATERIALS PLAN L5.0

SCALE 30' 0 60'

FILE NO.

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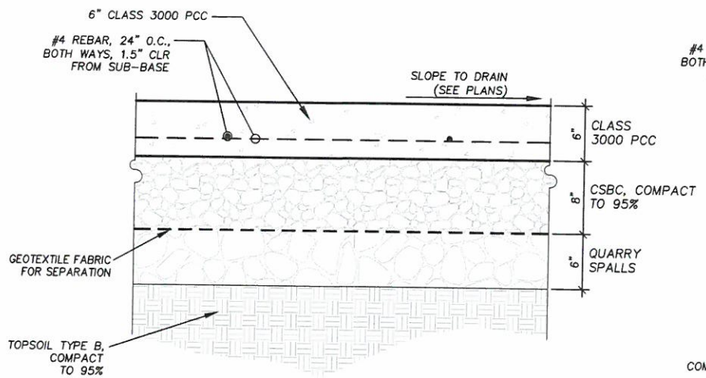
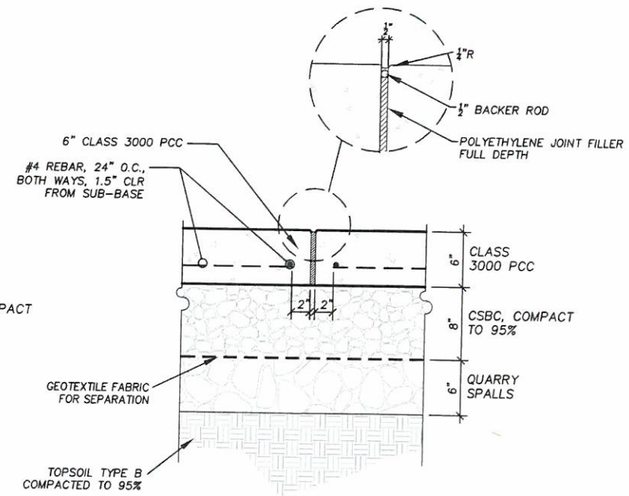
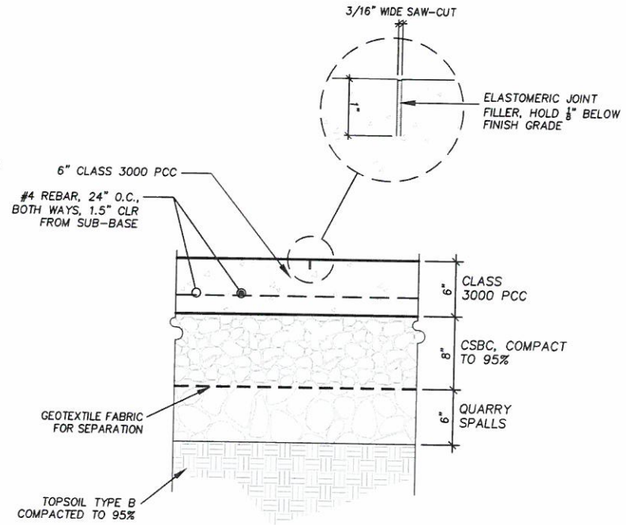


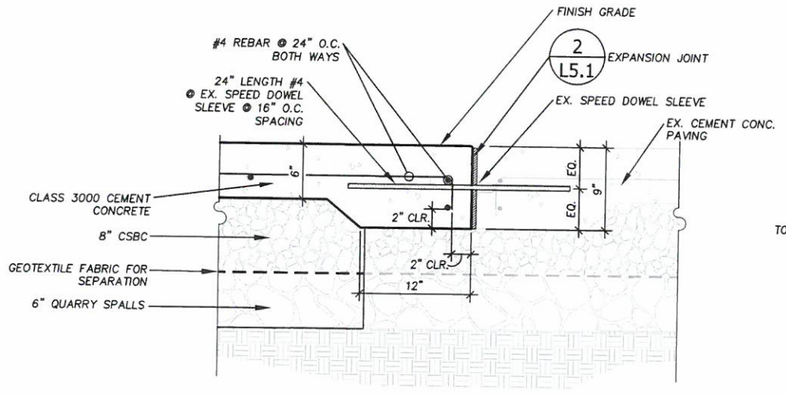
1 / L5.1 **Cement Concrete Paving Type A**
SCALE: 1-1/2"=1'-0"



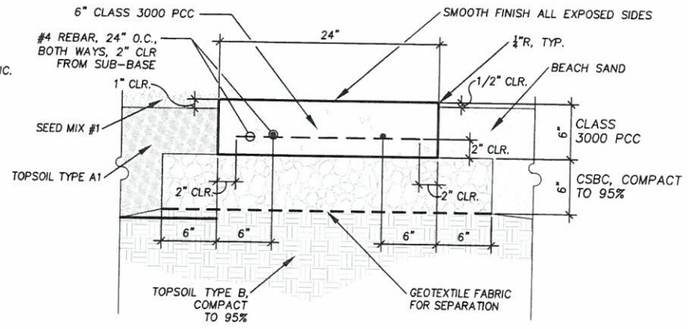
2 / L5.1 **Expansion Joint**
SCALE: 1-1/2"=1'-0"



3 / L5.1 **Control Joint**
SCALE: 1-1/2"=1'-0"



3 / L5.1 **Thickened Edge Paving**
SCALE: 1-1/2"=1'-0"



4 / L5.1 **Barrier Curb**
SCALE: 1-1/2"=1'-0"

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

SITE DETAILS
L5.1

SCALE 30' 0 60'

FILE NO.

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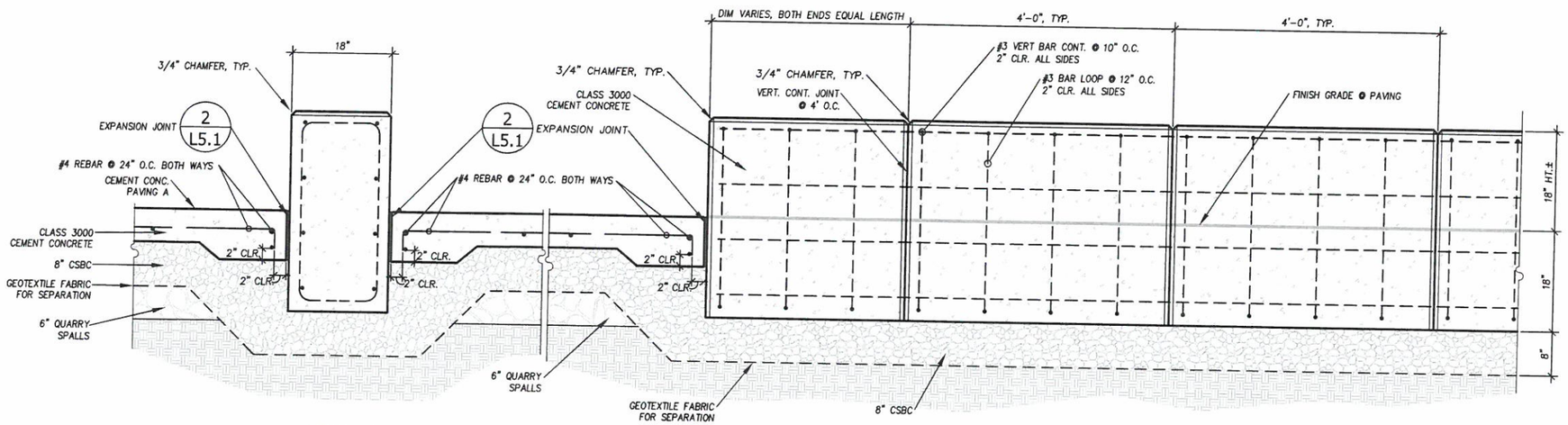
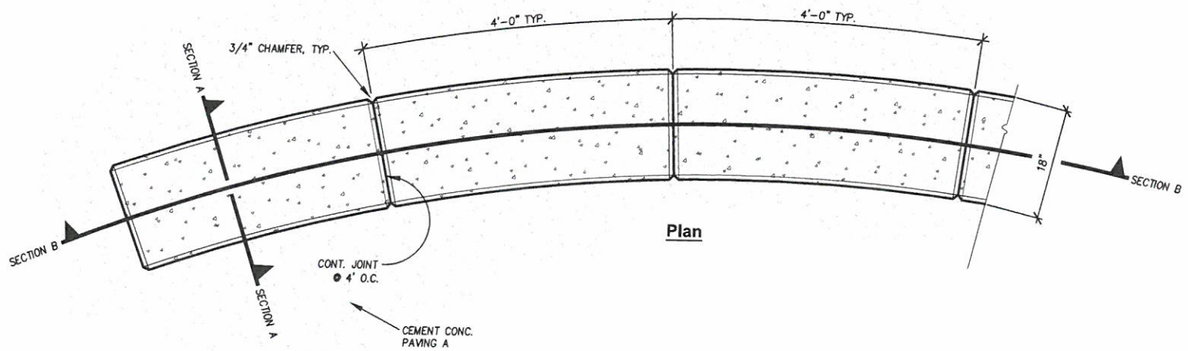


Section A

Section B



Plan

1/L5.2 18" HEIGHT CONCRETE SEATWALL

SCALE: 1"=1'-0"

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

SITE DETAILS
L5.2

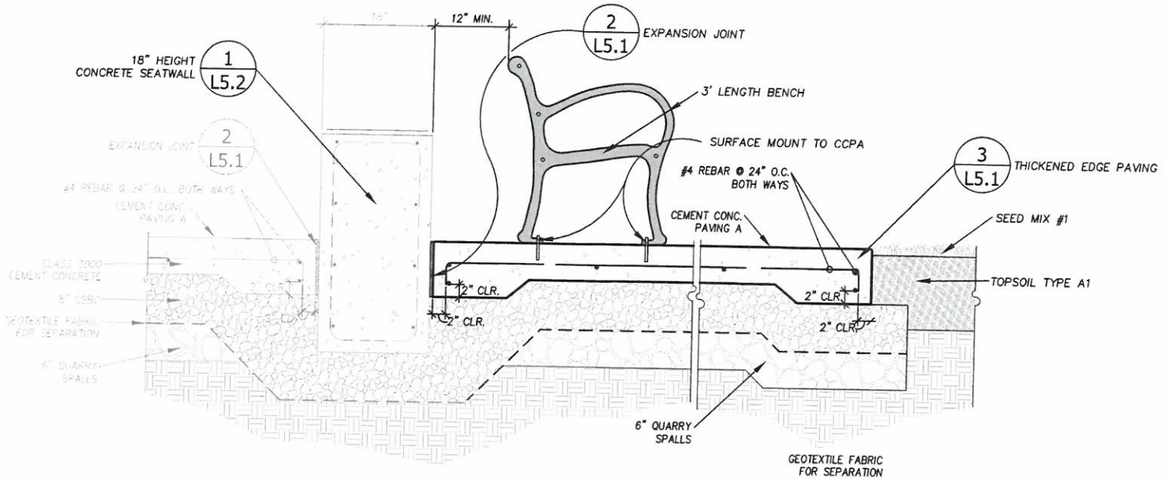
SCALE
30'
0 60'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION

Bench Notes:

1. BENCHES SHALL BE 3' LENGTH, MOUNTAIN CLASSIC–ALL METAL, MODEL #MCBAL–3, COLOR: SEMI–GLOSS BLACK.
2. BENCHES ARE AVAILABLE FROM SITELINES PARK AND PLAYGROUNND PRODUCTS (800–541–0869).
3. BENCHES SHALL BE SURFACE MOUNTED TO CEMENT CONCRETE PAVING A PER MANUFACTURER'S RECOMMENDATIONS. INSTALL WITH MANUFACTURER'S STAINLESS STEEL, VANDAL RESISTANT MOUNTING HARDWARE PACKAGE.
4. COORDINATE EXACT LOCATION OF BENCHES WITH OWNER'S RESPRESENTATIVE.



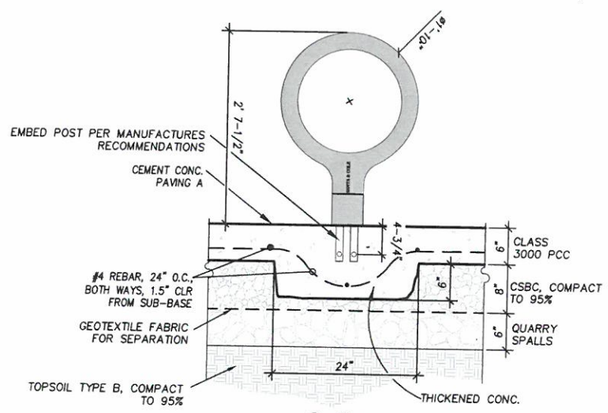
1 L5.3 **BENCH DETAIL**
SCALE: 1"=1'-0"

Bike Rack Notes:

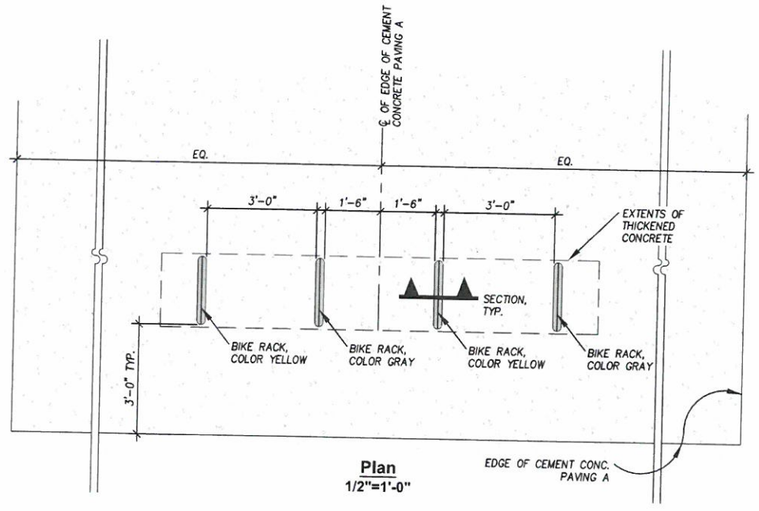
1. ALL BIKE RACK COMPONENTS TO BE FROM LANDSCAPE FORMS:

LANDSCAPE FORMS, INC.
431 LAWNDALE AVENUE
KALAMAZOO, MICHIGAN 49048
TOLL FREE (800) 521–2546
PHONE (269) 381–0396
FAX (269) 381–3455
WEBSITE WWW.LANDSCAPEFORMS.COM

2. MODEL SHALL BE KEY: COLOR: GRAY AND YELLOW (SEE PLAN FOR LAYOUT)



Section
1"=1'-0"

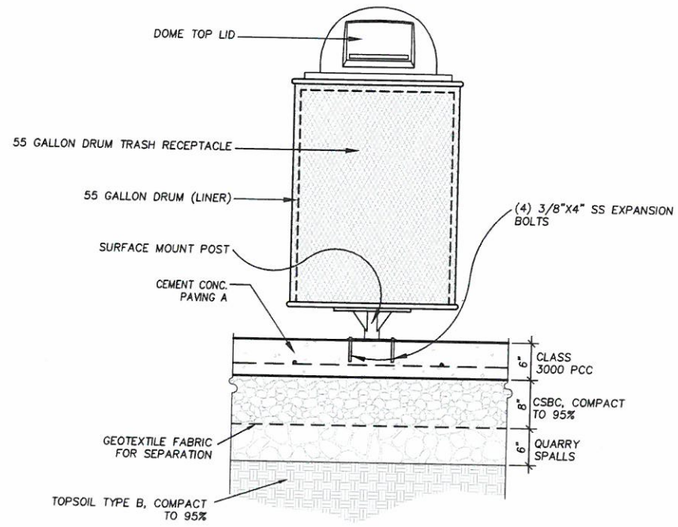


Plan
1/2"=1'-0"

3 L5.3 **BIKE RACK DETAIL**
SCALE: 1"=1'-0"

Trash Receptacle Notes:

1. ALL TRASH RECEPTACLE COMPONENTS (EXCEPT EXPANSION BOLTS) ARE AVAILABLE FROM WABASH VALLEY. CONTACT NW PLAYGROUND EQUIPMENT (1–800–726–0031).
2. 55 GALLON TRASH RECEPTACLE SHALL BE MODEL #9589, EXPANDED METAL, COLOR: BLACK.
3. PROVIDE 55 GALLON DRUM LINER.
4. DOME TOP LID SHALL BE MODEL #DT200N, COLOR: BLACK.
5. SURFACE MOUNT POST SHALL BE MODEL #LR105N, COLOR: BLACK.



2 L5.3 **TRASH RECEPTACLE DETAIL**
SCALE: 1"=1'-0"

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

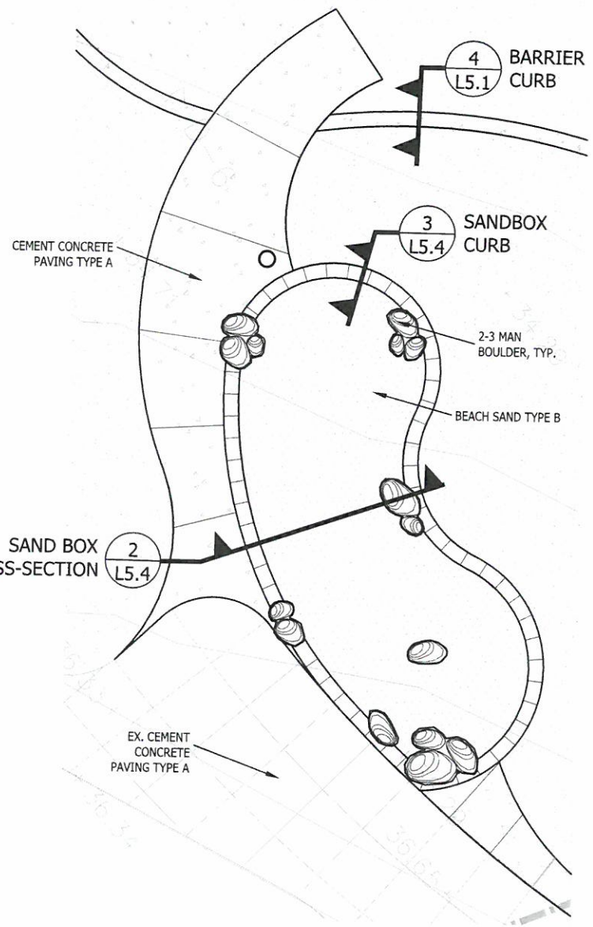
LAKE SAMMAMISH BEACH RESTORATION

SITE DETAILS
L5.3

SCALE 30' 0 60'

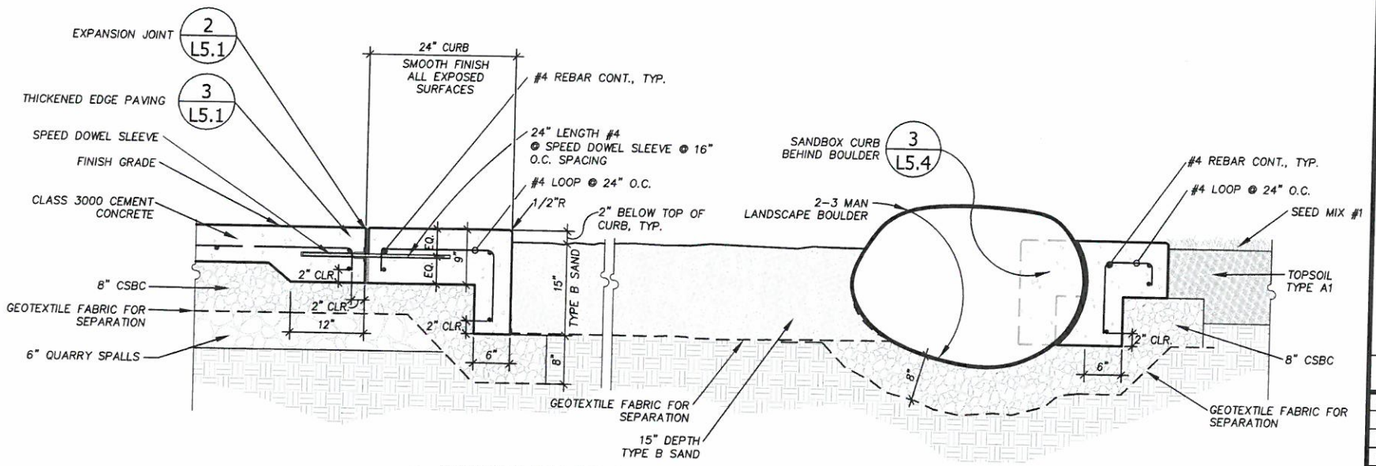
FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION



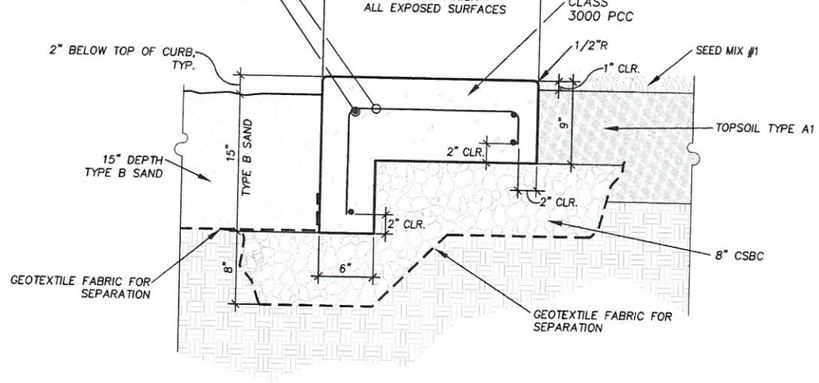
1 L5.4 ENLARGED SANDBOX PLAN

SCALE: 1"=10'-0"



2 L5.4 SANDBOX CROSS-SECTION

SCALE: 1"=1'-0"



3 L5.4 SANDBOX CURB

SCALE: 1-1/2"=1'-0"

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CAUTION!!! OVERHEAD AND UNDERGROUND UTILITIES

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

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E-MAIL bob@rwdroll.com

CAD NO. 12003A BEACH 5.4 Sand Box Details.dwg

NO.	REVISIONS	INT.	APP.	DATE

ACTION	BY	DATE
DESIGNED		1-13-2015
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Robert W. Droll
Certificate No. 530
PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

SAND BOX DETAILS
L5.4

SCALE
VARIES

FILE NO.

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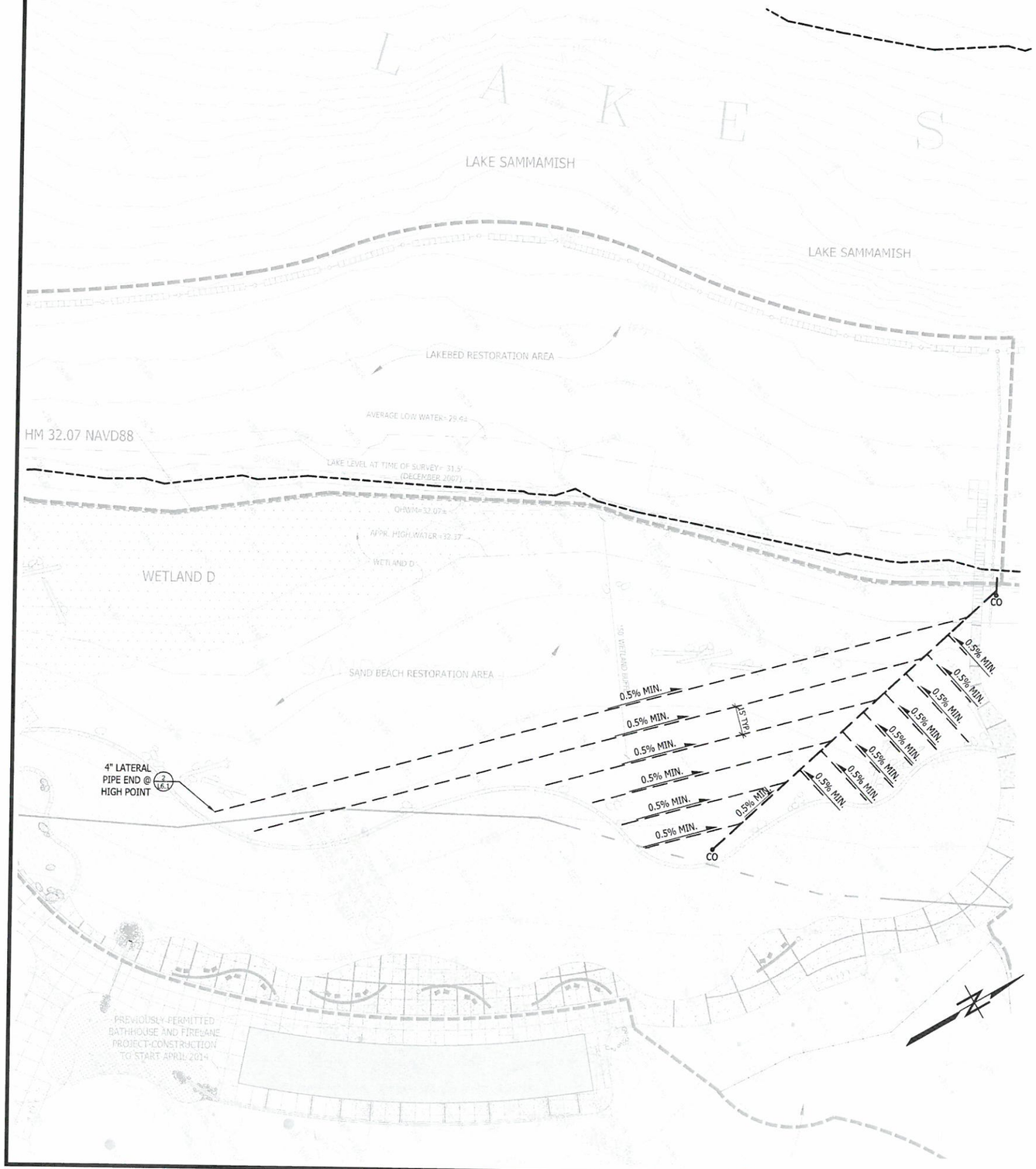
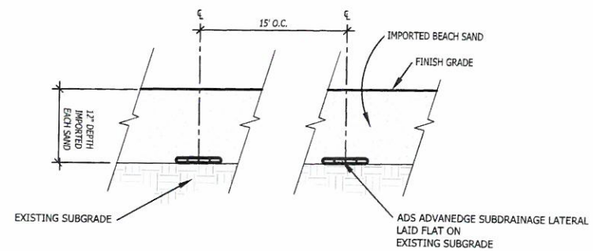
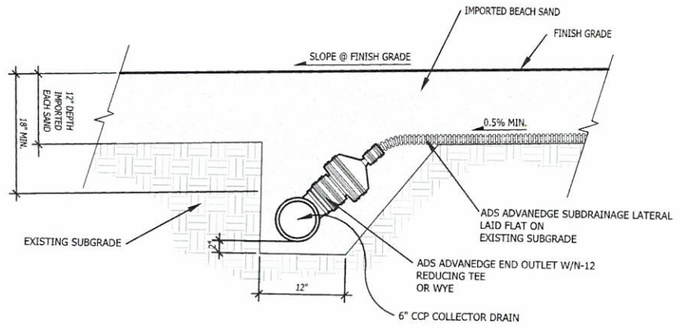




1 L6.1 **LATERAL DRAIN**
SCALE: NOT TO SCALE



2 L6.1 **COLLECTOR DRAIN**
SCALE: NOT TO SCALE

DRAINAGE LEGEND

1. ADS ADVANEDGE END OUTLET W/N-12 REDUCING TEE OR WYE — 2 L6.1
2. ADS ADVANEDGE SUBDRAINAGE LATERAL LAID FLAT ON EXISTING SUBGRADE — 1 L6.1
3. 6" CCP COLLECTOR DRAIN — 2 L6.1
4. LIMIT OF WORK
5. CO 6" CCP COLLECTOR CLEAN-OUT

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CAD NO. 12003A BEACH 6.1 Drainage Plan.dwg

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LAKE SAMMAMISH STATE PARK

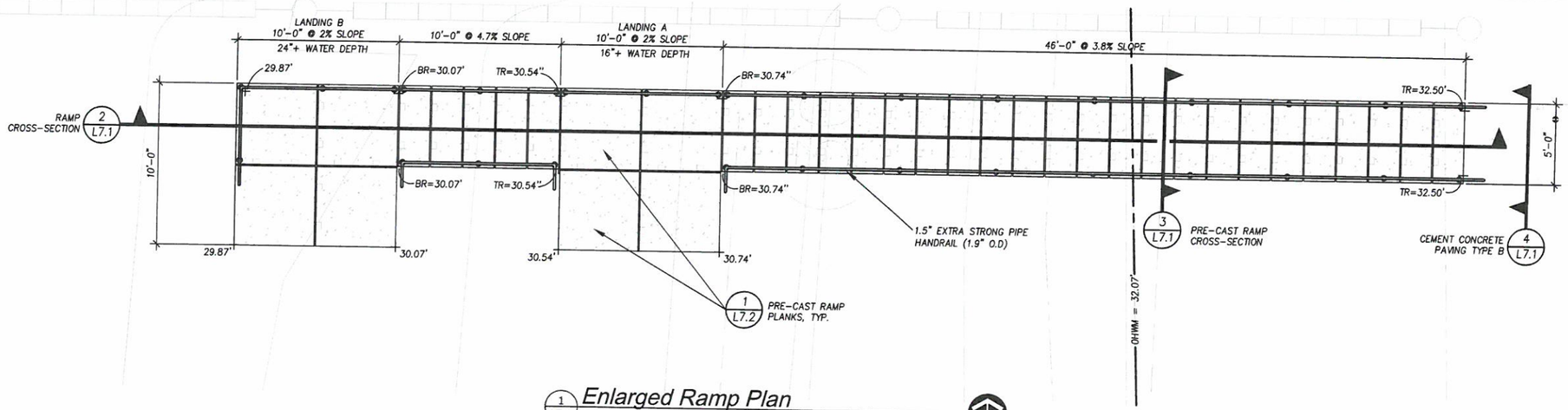
LAKE SAMMAMISH BEACH RESTORATION

SUBSURFACE DRAINAGE PLAN
L6.1

SCALE 30' 0 60'

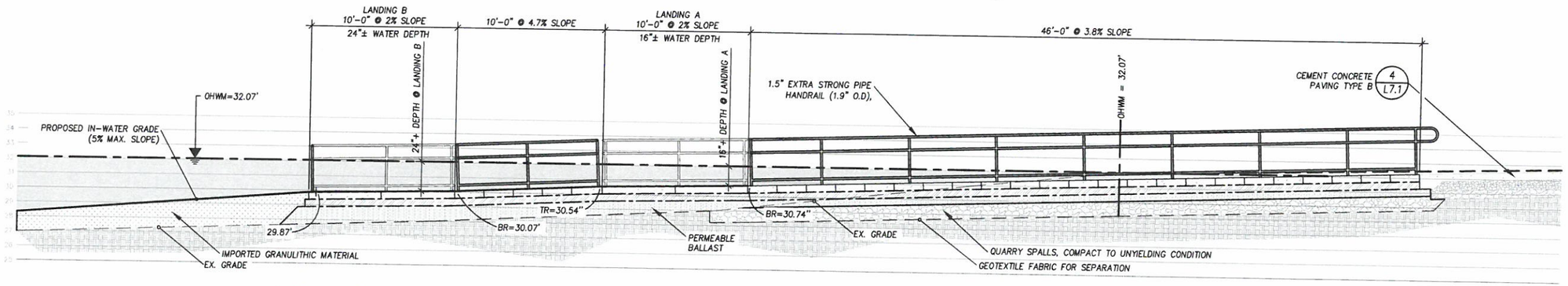
FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION



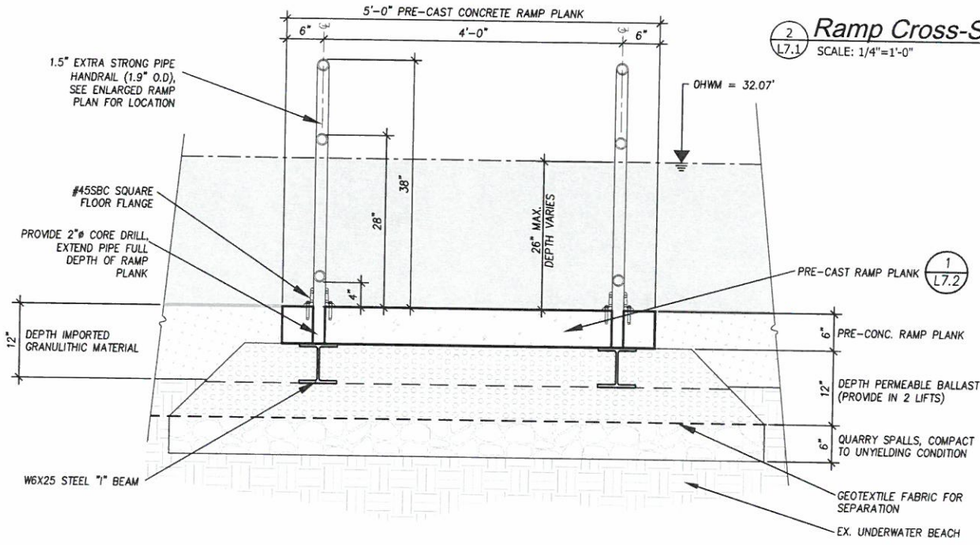
1 L7.1 Enlarged Ramp Plan

SCALE: 1/4"=1'-0"



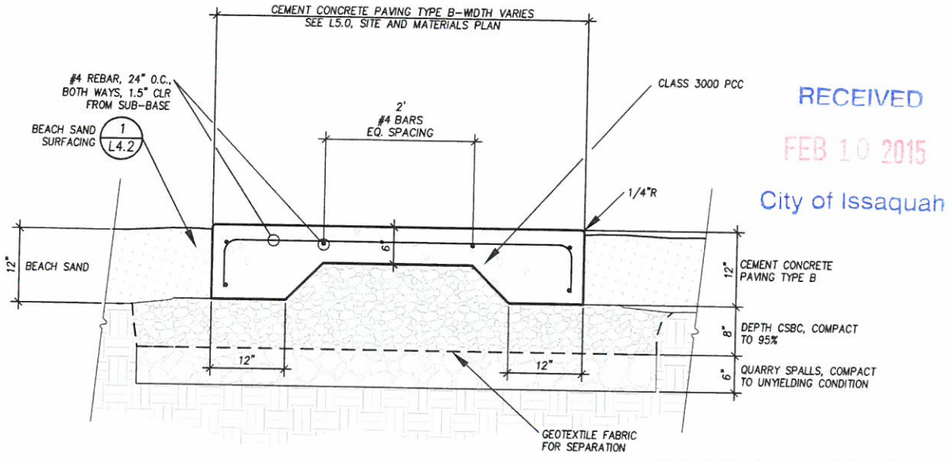
2 L7.1 Ramp Cross-Section

SCALE: 1/4"=1'-0"



3 L7.1 Pre-Cast Ramp Cross-Section

SCALE: 1"=1'-0"



4 L7.1 Cement Concrete Paving Type B

SCALE: 1"=1'-0"

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CAD NO. 12003A BEACH 7.1 Ramp.dwg

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LAKE SAMMAMISH STATE PARK

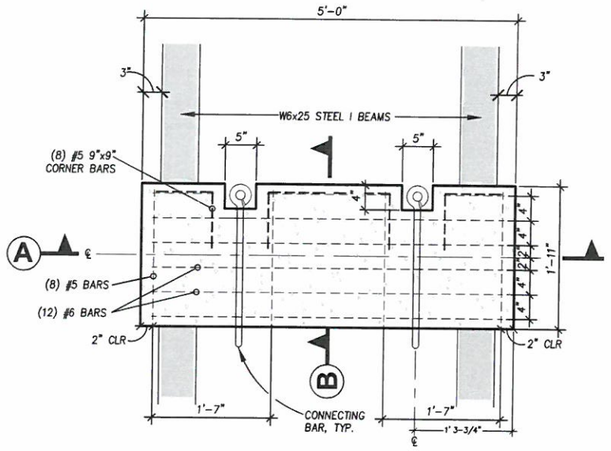
LAKE SAMMAMISH BEACH RESTORATION

RAMP PLAN, CROSS-SECTION & DETAILS
L7.1

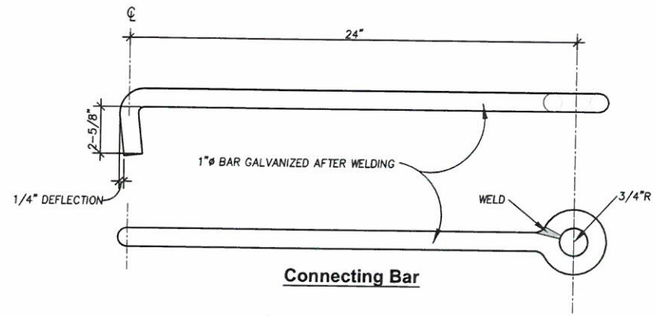
SCALE 20' 0 40'

FILE NO.

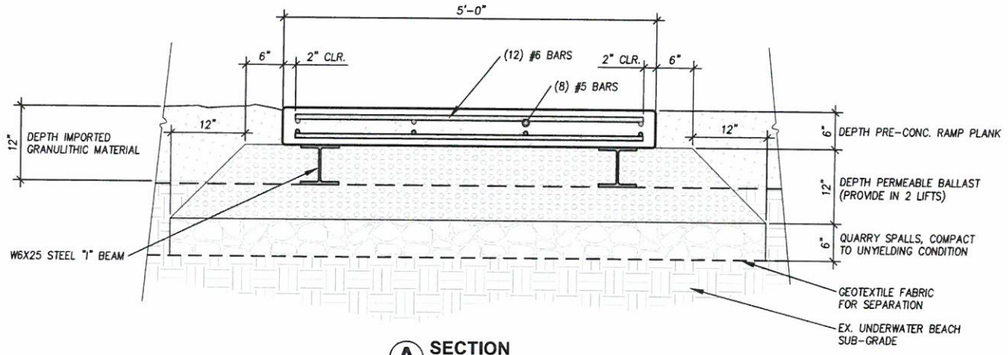
REVIEW SET- NOT FOR CONSTRUCTION



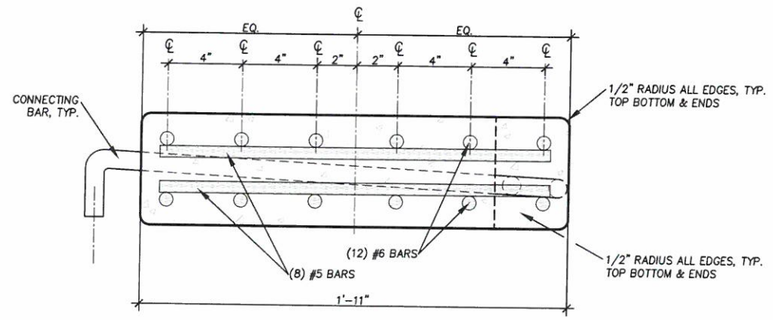
PLAN
1-1/2"=1'-0"



Connecting Bar

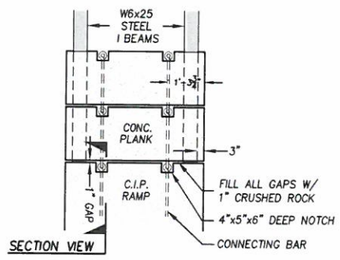


A SECTION
1-1/2"=1'-0"

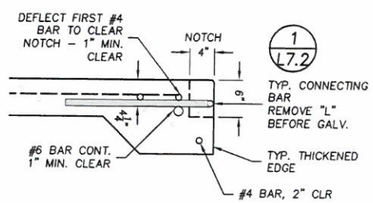


B SECTION
3"=1'-0"

1 L7.2 Pre-Cast Ramp Plank
SCALE: As Noted

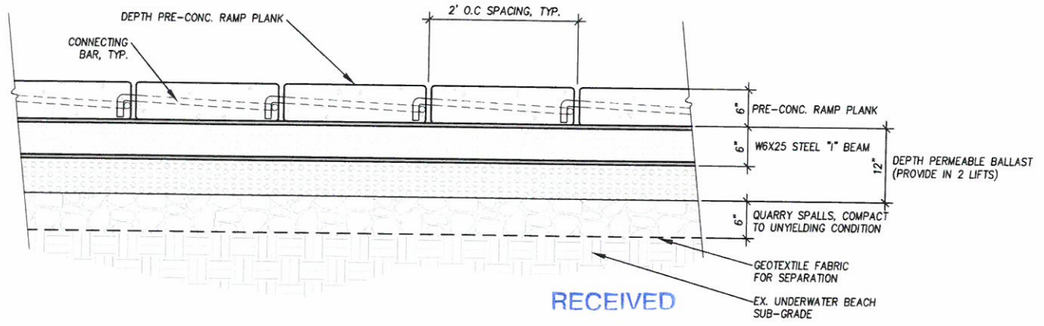


Plan View
SCALE: 3/4"=1'-0"



Section View
SCALE: 1"=1'-0"

2 L7.2 Ramp to Plank Connection
SCALE: As Noted



3 L7.2 Typical Plank Assembly
SCALE: 1"=1'-0"

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CAD NO. 12003A BEACH 7.2 Ramp.dwg

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PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

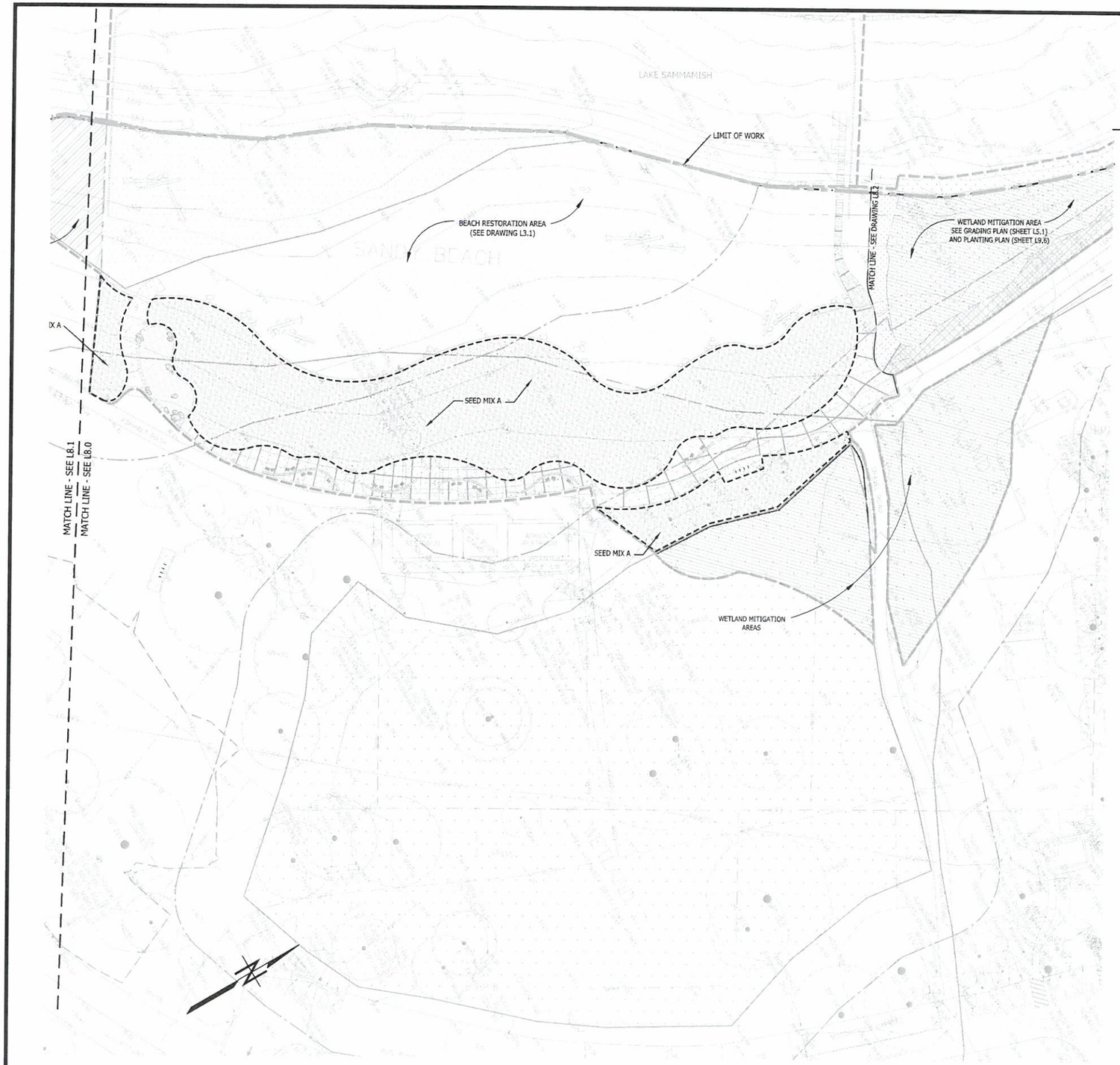
LAKE SAMMAMISH BEACH RESTORATION

RAMP PLANK DETAILS L7.2

SCALE 20' 0 40'

FILE NO.

REVIEW SET- NOT FOR CONSTRUCTION



SEED MIX LEGEND

SEED MIX A	% BY WEIGHT
DELAWARE DWARF XL PERENNIAL RYEGRASS	40
ANNUL RYEGRASS	20
GIBRALTAR CREEPING RED FESCUE	20
HIGHLAND BENTGRASS	10
NEW ZEALAND WHITE CLOVER	10

APPLICATION RATE 8 LBS/1000 SQ. FT.

1. ALL SEED SHALL BE 90% PURE WITH A MINIMUM OF 90% GERMINATION. TOTAL WEED SEED SHALL NOT EXCEED 0.5%.
2. SEED LAW. ALL SEEDS SHALL CONFORM TO THE REQUIREMENTS OF THE WASHINGTON STATE SEED LAWS, AND WHERE APPLICABLE, THE FEDERAL SEED ACT.

SEED MIX B	% BY WEIGHT
ELF PERENNIAL RYEGRASS	70
CREEPING RED FESCUE	20
HARD FESCUE	10

APPLICATION RATE: 220 LBS. PER ACRE.

1. ALL SEED SHALL BE 90% PURE WITH A MINIMUM OF 90% GERMINATION. TOTAL WEED SEED SHALL NOT EXCEED 0.5%.
2. SEED LAW. ALL SEEDS SHALL CONFORM TO THE REQUIREMENTS OF THE WASHINGTON STATE SEED LAWS, AND WHERE APPLICABLE, THE FEDERAL SEED ACT.

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LAKE SAMMAMISH STATE PARK

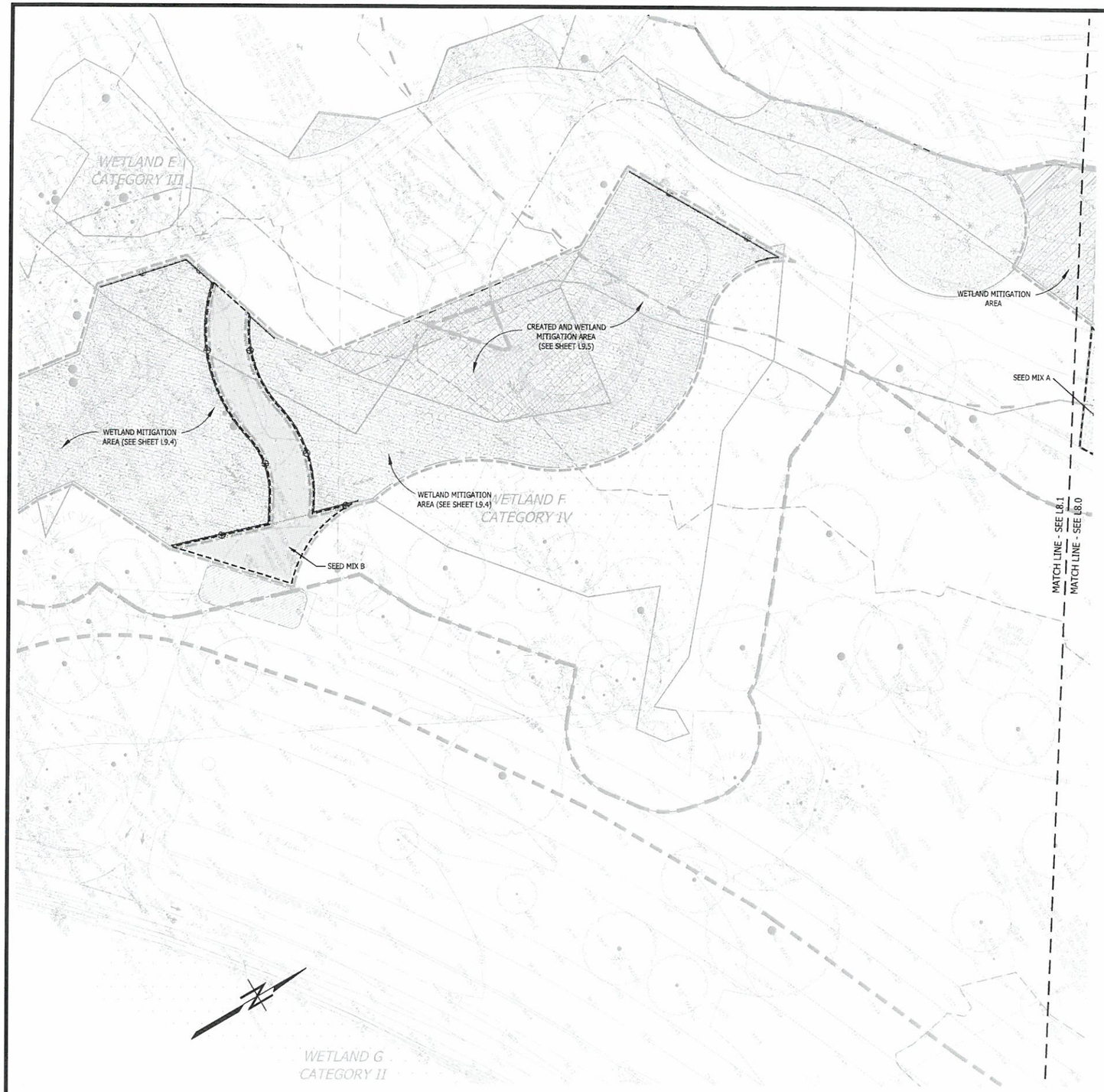
LAKE SAMMAMISH BEACH RESTORATION

LANDSCAPE PLAN-NORTH L8.0

SCALE 40' 0 80'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION



SEED MIX LEGEND

SEED MIX A	% BY WEIGHT
DELAWARE DWARF XL PERENNIAL RYEGRASS	40
ANNUL RYEGRASS	20
GIBRALTAR CREEPING RED FESCUE	20
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NEW ZEALAND WHITE CLOVER	10

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

LANDSCAPE PLAN-SOUTH L8.1

SCALE 50' 0 100'

FILE NO.

REVIEW SET - NOT FOR CONSTRUCTION

NE 1/4 TGW SH LDS ADJ LESS CO RD LESS DD #4 TGW E

LAKE SAMMAMISH STATE PARK - SUNSET BEACH IMPROVEMENTS

CONTACTS

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PHONE:	(360) 902 8658
PRIMARY CONSULTANT:	ROBERT W. DROLL LANDSCAPE ARCHITECT, PS
ADDRESS:	4405 7TH AVENUE SE, SUITE 203 LACEY, WA 98503
CONTACT:	ROBERT W. DROLL
PHONE:	(360) 456 3813
ENVIRONMENTAL CONSULTANT:	THE WATERSHED COMPANY
ADDRESS:	750 SIXTH STREET SOUTH KIRKLAND, WA 98033
CONTACT:	JENNI CREVELING, PWS
PHONE:	(425) 822-5242
SURVEYOR	BUSH, ROED & HITCHINGS INC.
ADDRESS:	2009 MINOR AVE E, SEATTLE WA
PHONE:	(206) 323-4144

SHEET INDEX

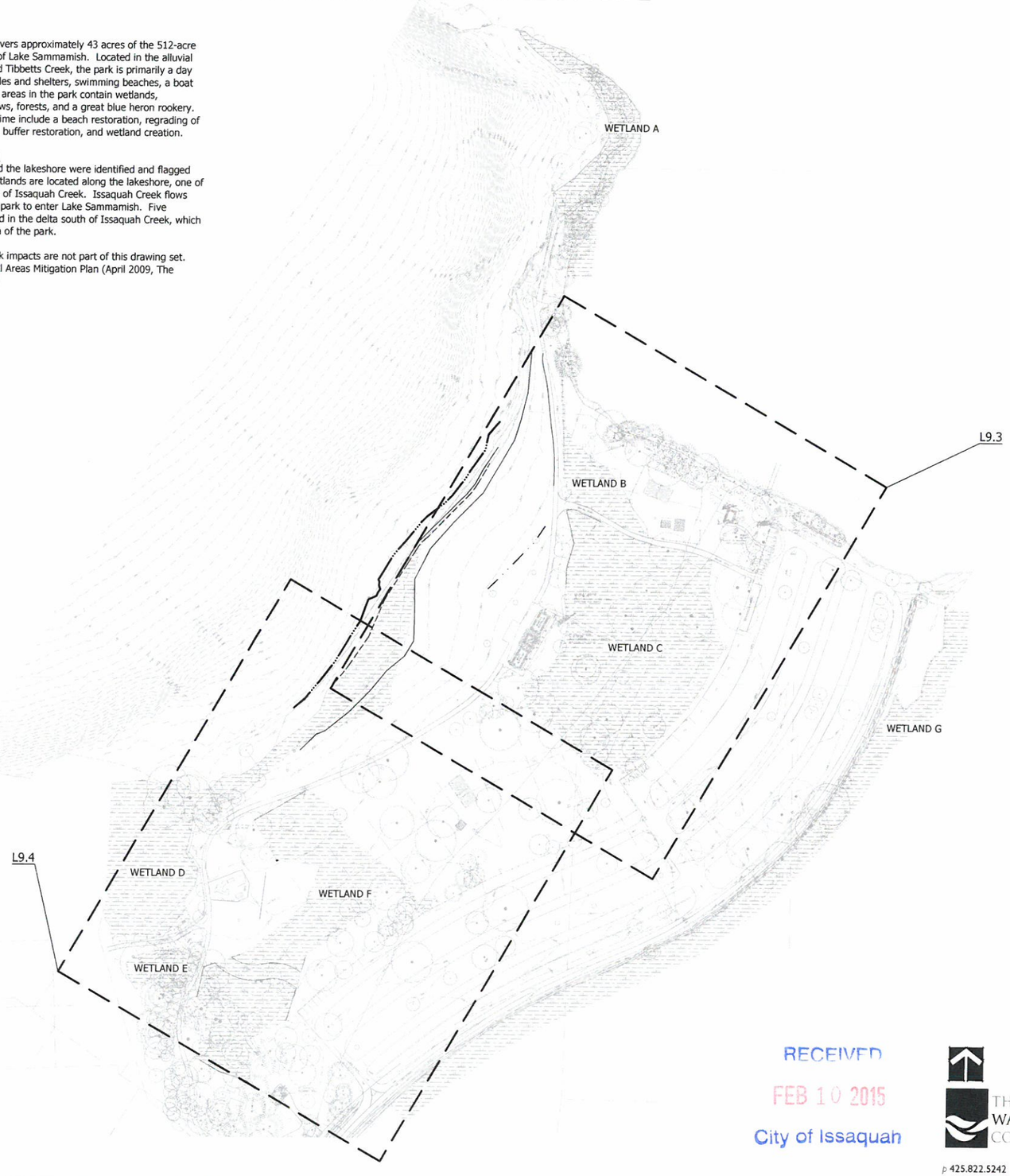
SITE INFORMATION

The Sunset Beach study area covers approximately 43 acres of the 512-acre park, which is at the south end of Lake Sammamish. Located in the alluvial floodplain of Issaquah Creek and Tibbetts Creek, the park is primarily a day use area that includes picnic tables and shelters, swimming beaches, a boat launch, and trails. Undeveloped areas in the park contain wetlands, salmon-bearing streams, meadows, forests, and a great blue heron rookery. Proposed improvements at this time include a beach restoration, regrading of beach and wetland, wetland and buffer restoration, and wetland creation.

CRITICAL AREAS INFORMATION

Seven wetlands, one stream, and the lakeshore were identified and flagged within the project area. Two wetlands are located along the lakeshore, one of which continues along the banks of Issaquah Creek. Issaquah Creek flows from south to north through the park to enter Lake Sammamish. Five depressional wetlands are located in the delta south of Issaquah Creek, which is the Sunset Beach day use area of the park.

NOTE: Bath house and boardwalk impacts are not part of this drawing set. Refer to the Sunset Beach Critical Areas Mitigation Plan (April 2009, The Watershed Company) for details.



LAKE SAMMAMISH STATE PARK VICINITY MAP (NOT TO SCALE)

THE WATERSHED COMPANY
p 425.822.5242 f 425.827.8136
www.watershedco.com

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LAKE SAMMAMISH STATE PARK

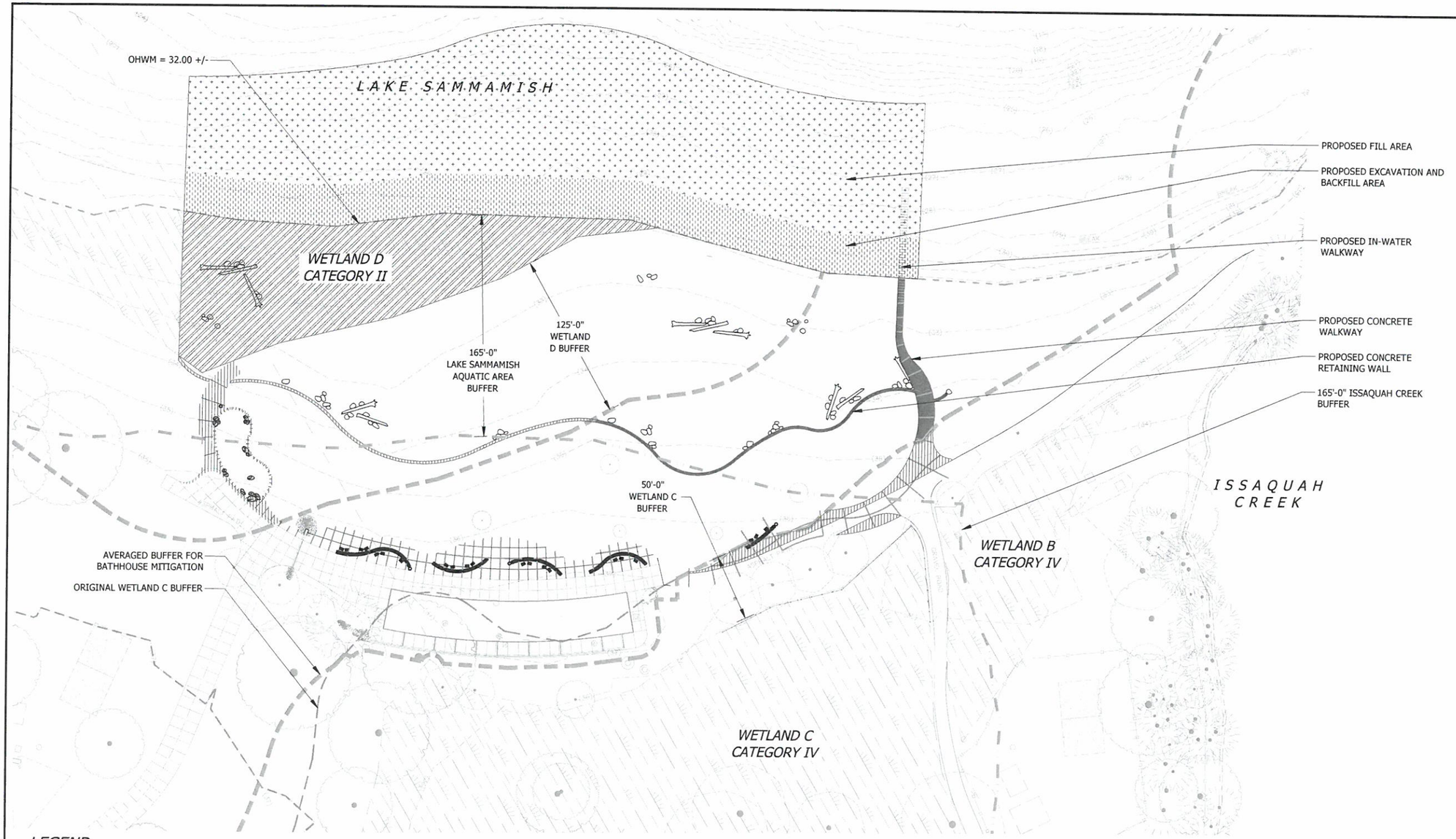
LAKE SAMMAMISH BEACH RESTORATION

OVERVIEW MAP- EXISTING CONDITIONS

L9.1 OF 11

SCALE 0 60 120 240

FILE NO.



LEGEND

- LAKE SAMMAMISH OHWM
- AQUATIC BUFFER
- WETLAND BUFFER
- DIRECT WETLAND IMPACT = 21,541 SF
- WETLAND BUFFER IMPACT = 4,469 SF
- DIRECT AQUATIC IMPACT ZONE 1 = 52,994 SF
- DIRECT AQUATIC IMPACT ZONE 2 = 16,374 SF
- AQUATIC BUFFER IMPACT = 1,539 SF

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LAKE SAMMAMISH STATE PARK

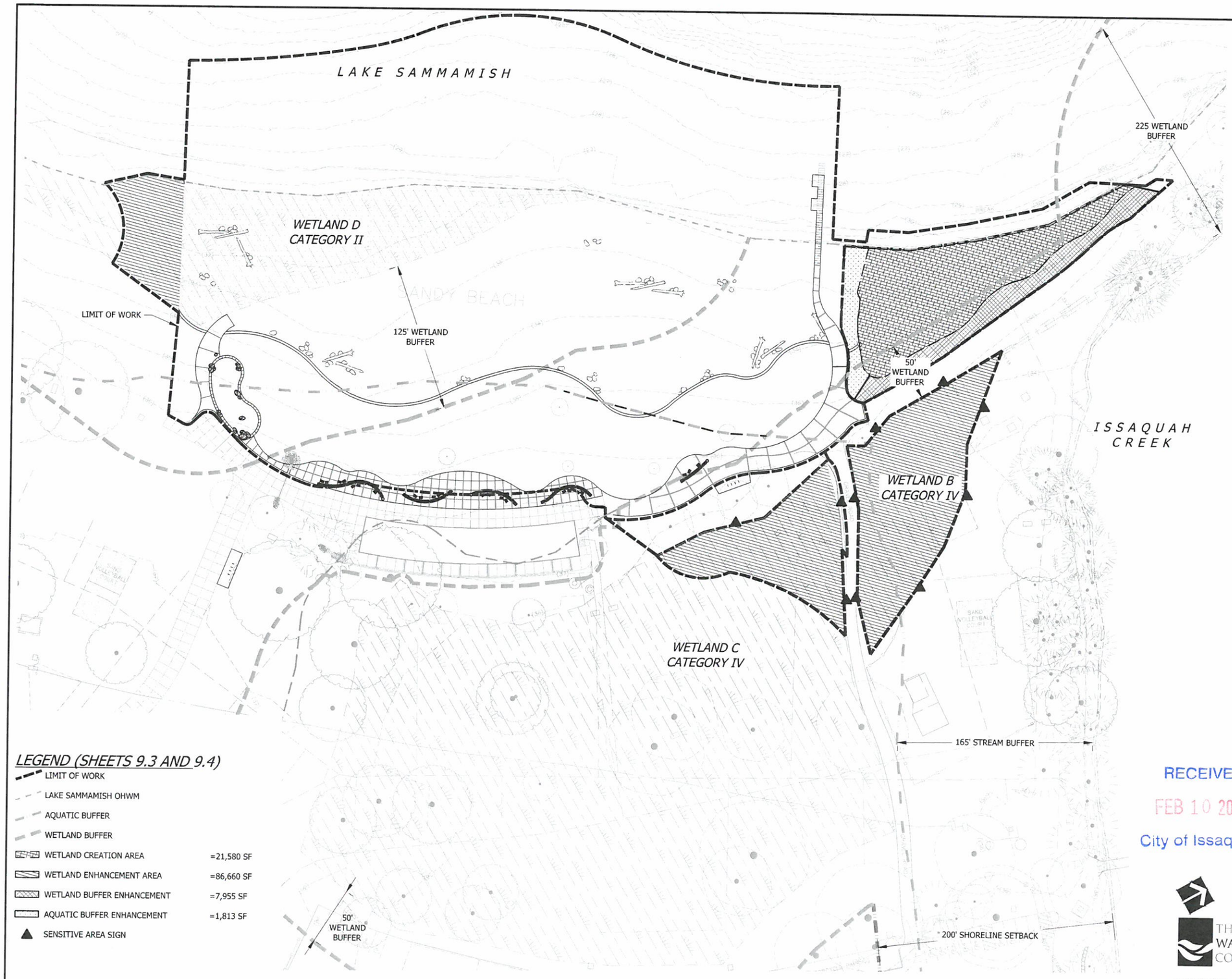
LAKE SAMMAMISH BEACH RESTORATION

PROPOSED WETLAND & SHORELINE IMPACTS

L9.2 OF 11

SCALE 0 20 40 80

FILE NO.



LEGEND (SHEETS 9.3 AND 9.4)

- LIMIT OF WORK
- LAKE SAMMAMISH OHWM
- AQUATIC BUFFER
- WETLAND BUFFER
- WETLAND CREATION AREA =21,580 SF
- WETLAND ENHANCEMENT AREA =86,660 SF
- WETLAND BUFFER ENHANCEMENT =7,955 SF
- AQUATIC BUFFER ENHANCEMENT =1,813 SF
- SENSITIVE AREA SIGN

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LAKE SAMMAMISH STATE PARK

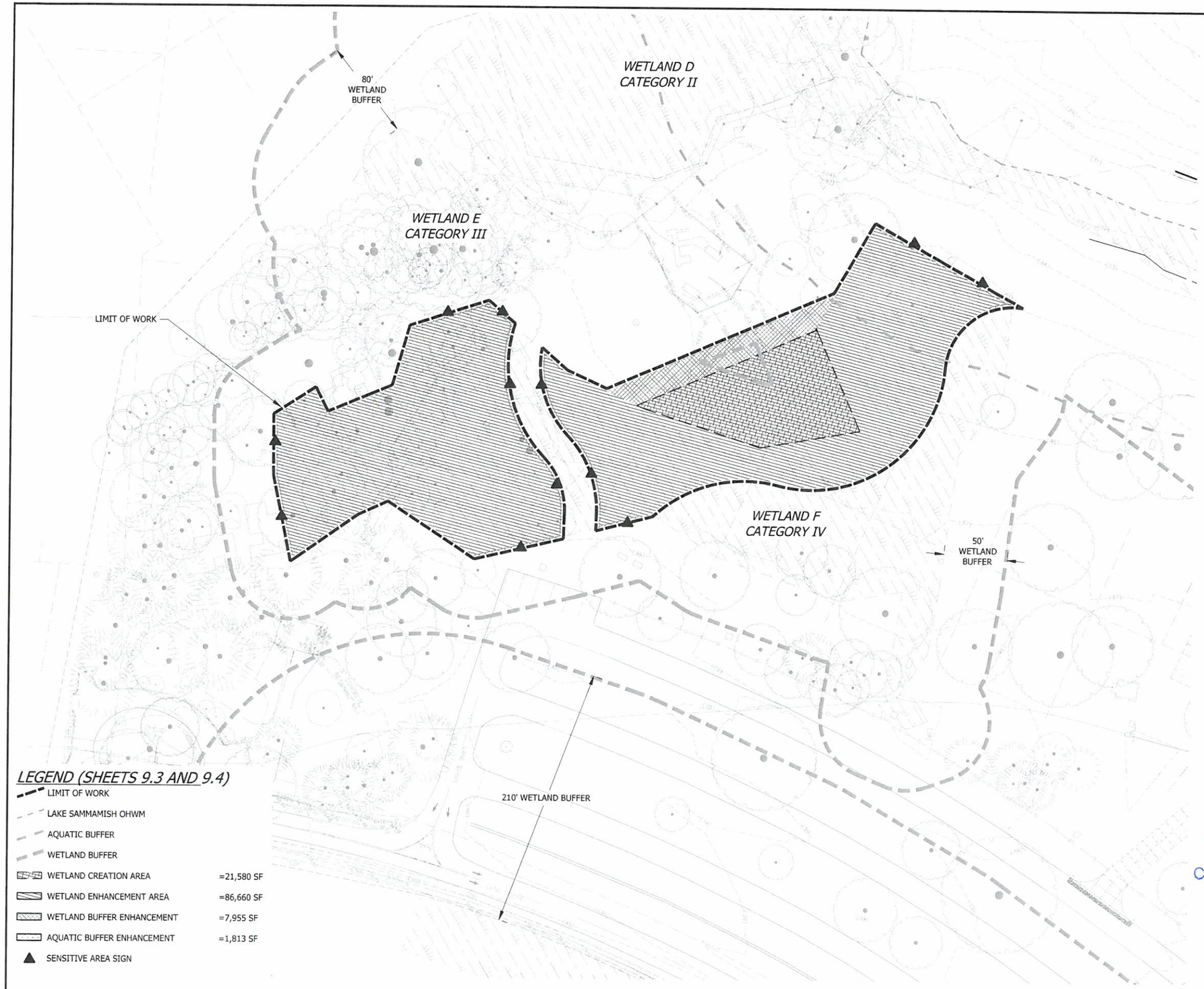
LAKE SAMMAMISH BEACH RESTORATION

PROPOSED MITIGATION-PART 1

L9.3 OF 11

SCALE 0 20 40 80

FILE NO.



LEGEND (SHEETS 9.3 AND 9.4)

LIMIT OF WORK	
LAKE SAMMAMISH OHWM	
AQUATIC BUFFER	
WETLAND BUFFER	
WETLAND CREATION AREA	=21,580 SF
WETLAND ENHANCEMENT AREA	=86,660 SF
WETLAND BUFFER ENHANCEMENT	=7,955 SF
AQUATIC BUFFER ENHANCEMENT	=1,813 SF
SENSITIVE AREA SIGN	

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

PROPOSED MITIGATION-PART 2

L9.4 OF 11

SCALE 0 20 40 80

FILE NO.

LIMIT OF GRADING AREA

POND BOTTOM = 33.75'

50' WETLAND BUFFER

EXISTING TREE, TYP. SEE SHEET L1.2, EXISTING CONDITIONS PLAN

WETLAND F CATEGORY IV

GRADING PLAN LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR — 28 —
- EXISTING SPOT ELEVATION
- LIMIT OF GRADING AREA
- WETLAND BUFFER

NOTES:
REFER TO SHEETS L2.0-2.1 FOR TESC PLAN, AND L8.1 FOR SEEDING PLAN.

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LAKE SAMMAMISH STATE PARK

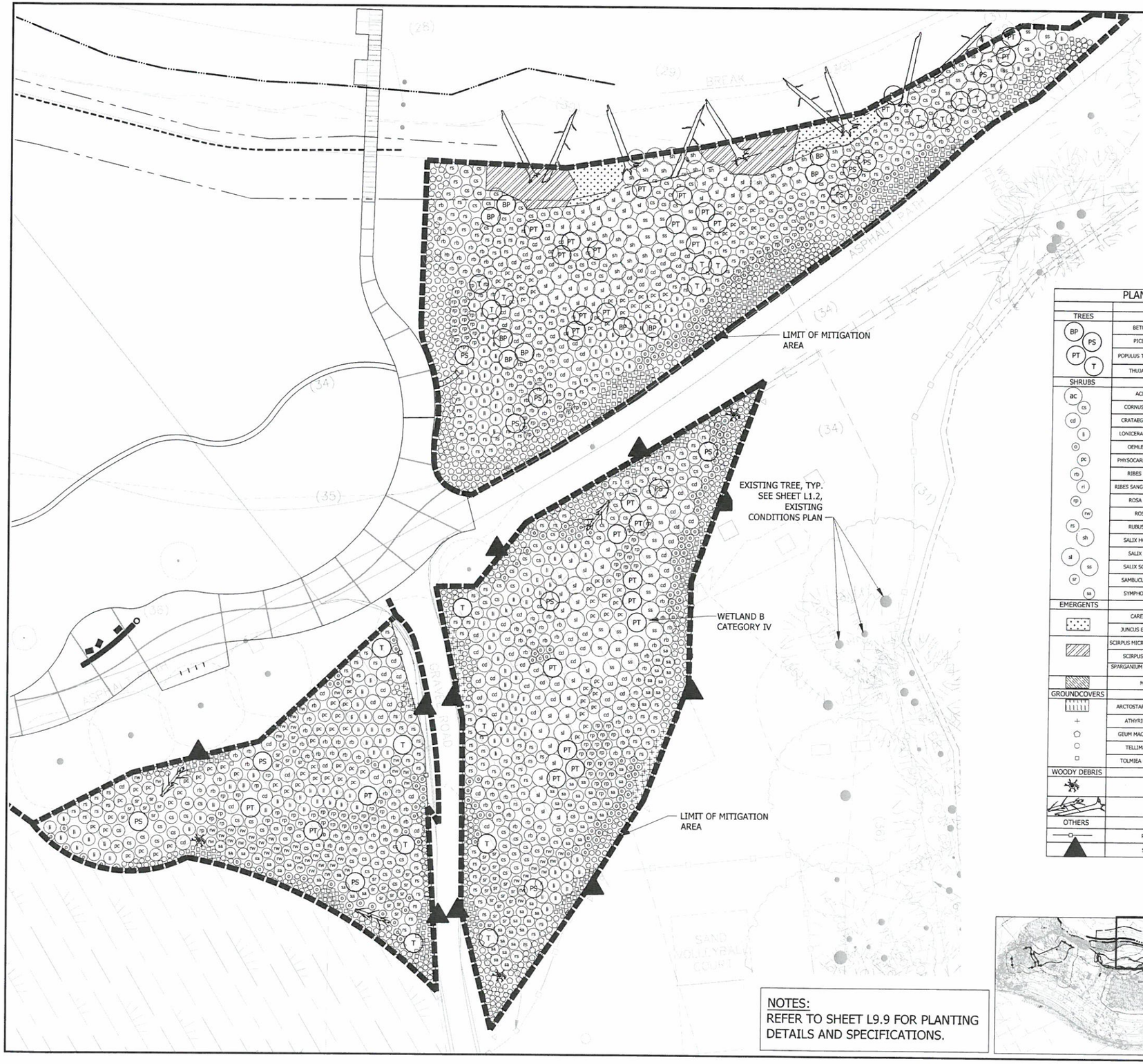
LAKE SAMMAMISH BEACH RESTORATION

GRADING PLAN

L9.5 OF 11

SCALE 0 10 20 40

FILE NO.



PLANT SCHEDULE (FOR SHEETS L9.6-L9.8)

	PLANT SPECIES	SIZE / SPACING	QUANTITIES	REMARKS
TREES				
BP	BETULA PAPYRIFERA / PAPER BIRCH	2 GAL. / AS SHOWN	22	TREE LOCATIONS SHOULD BE ADJUSTED TO AVOID STANDING WATER AND EXISTING NATIVE VEGETATION
PS	PICEA SITCHENSIS / SITKA SPRUCE	2 GAL. / AS SHOWN	23	
PT	POPULUS TRICHOCARPA / BLACK COTTONWOOD	2 GAL. / AS SHOWN	38	
T	THUJA PLICATA / WESTERN REDCEDAR	2 GAL. / AS SHOWN	25	
SHRUBS				
ac	ACER CIRCINATUM / VINE MAPLE	1 GAL./ AS SHOWN	62	ADJUST LOCATION TO AVOID STANDING WATER AND EXISTING NATIVE VEGETATION.
cs	CORNUS SERICEA / RED-OSIER DOGWOOD	1 GAL./ AS SHOWN	293	
cd	CRATAEGUS DOUGLASII / BLACK HAWTHORN	1 GAL./ AS SHOWN	222	
li	LONICERA INVOLUCRATA / BLACK TWINBERRY	1 GAL./ AS SHOWN	315	
o	OEMLERIA CERASIFORMIS / OSOBERRY	1 GAL./ AS SHOWN	617	
pc	PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	1 GAL./ AS SHOWN	252	
rb	RIBES BRACTEOSUM / STINK CURRANT	1 GAL./ AS SHOWN	219	
ri	RIBES SANGUINEUM / RED-FLOWERING CURRANT	1 GAL./ AS SHOWN	29	
rp	ROSA PISOCARPA / CLUSTERED ROSE	1 GAL./ AS SHOWN	209	
rw	ROSA WOODSII / WOODS' ROSE	1 GAL./ AS SHOWN	156	
rs	RUBUS SPECTABILIS / SALMONBERRY	1 GAL./ AS SHOWN	331	
sh	SALIX HOOKERIANA / HOOKER'S WILLOW	1 GAL./ AS SHOWN	34	
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sr	SAMBUCUS RACEMOSA / RED ELDERBERRY	1 GAL./ AS SHOWN	143	
sa	SYMPHORICARPOS ALBUS / SNOWBERRY	1 GAL./ AS SHOWN	195	
EMERGENTS				
	CAREX OBNUTPA / SLOUGH SEDGE	10" CU. IN. PLUG	353	SEE PLANTING DETAIL FOR TRIANGULAR SPACING SPECS.
	JUNCUS ENSIFOLIUS / DAGGER-LEAF RUSH	10" CU. IN. PLUG	353	
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	TOLMIEA MENZIESII / PIGGY-BACK PLANT	4" POT /24" ON CENTER	992	
WOODY DEBRIS				
	ROOTWAD	SEE CONSTRUCTION NOTES AND DETAILS	7	
	FALLEN TREE		27	
OTHERS				
	POST AND RAIL FENCE	1850 LF	SEE DETAIL F ON SHEET L9.9	
	SENSITIVE AREA SIGN	2	SEE DETAIL F ON SHEET L9.9	

NOTES:
REFER TO SHEET L9.9 FOR PLANTING DETAILS AND SPECIFICATIONS.

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PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

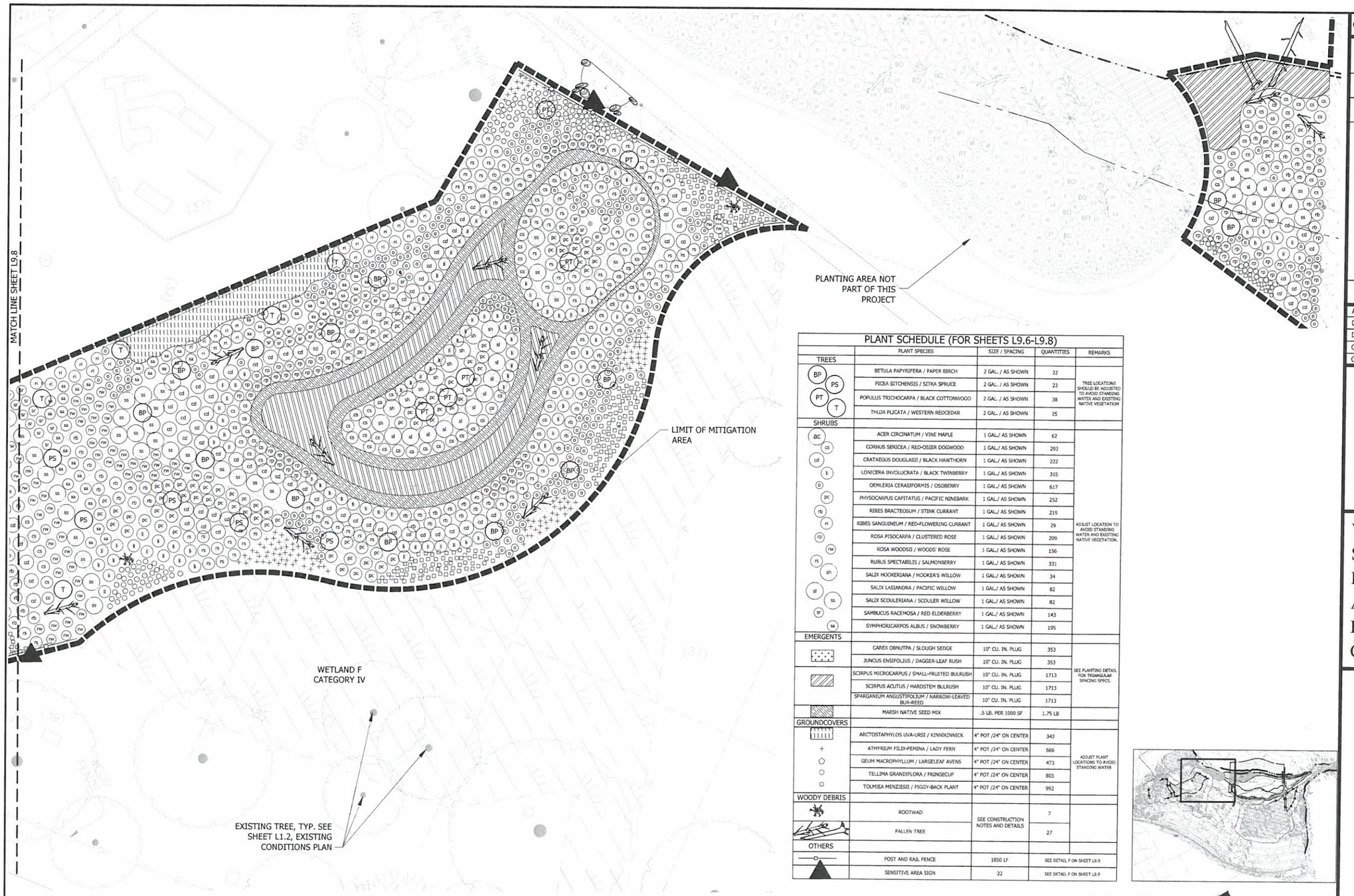
LAKE SAMMAMISH BEACH RESTORATION

PLANTING PLAN - PART 1 OF 3

L9.6 OF 11

SCALE 0 10 20 40

FILE NO.



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WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

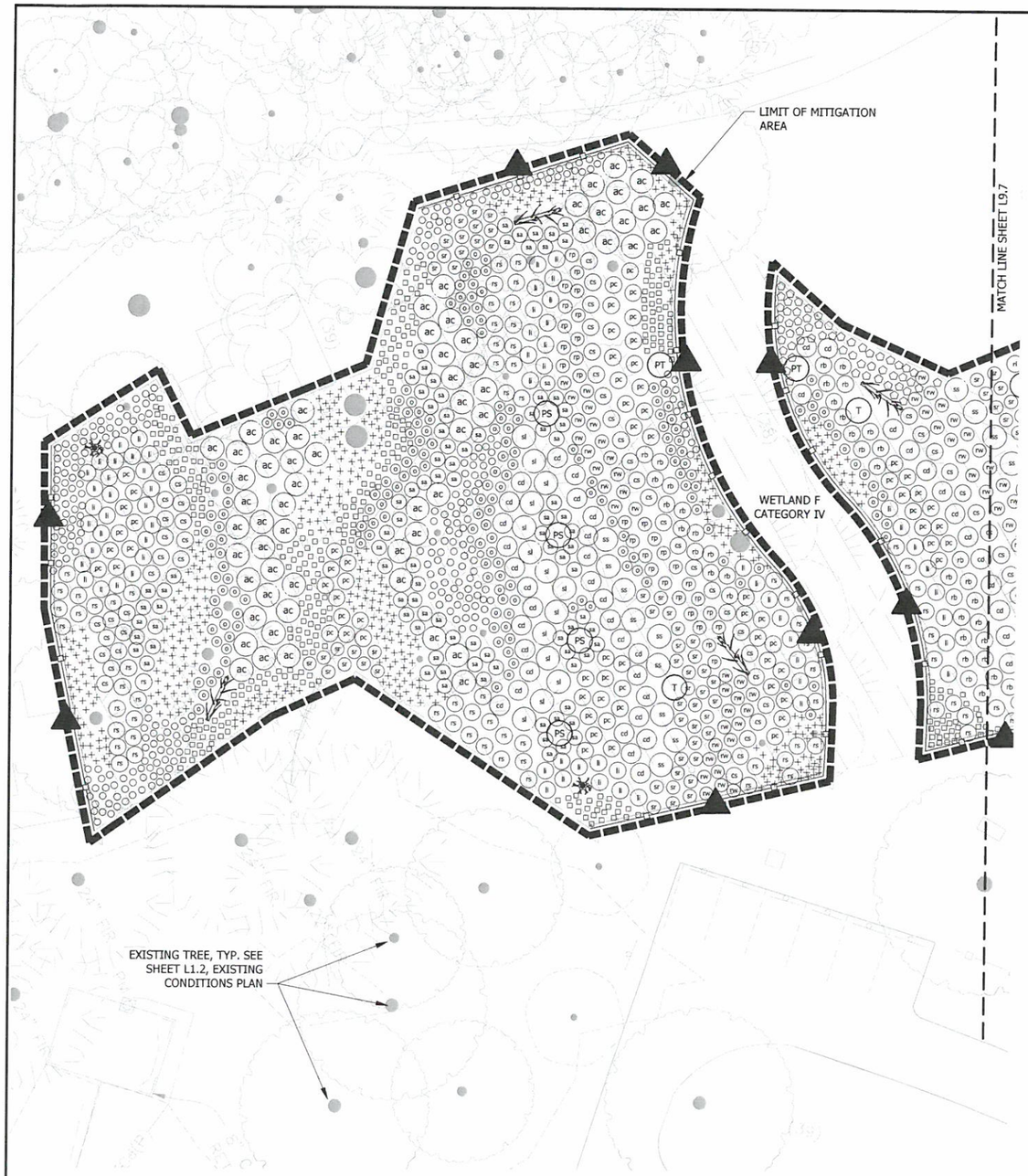
LAKE SAMMAMISH BEACH RESTORATION

PLANTING PLAN - PART 2 OF 3

L9.7 OF 11

SCALE 0 10 20 40

FILE NO.



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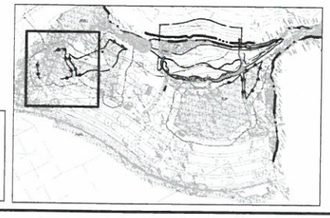

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

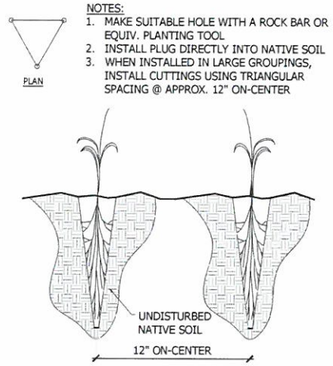
LAKE SAMMAMISH BEACH RESTORATION

PLANTING PLAN - PART 3 OF 3

L9.8 OF 11

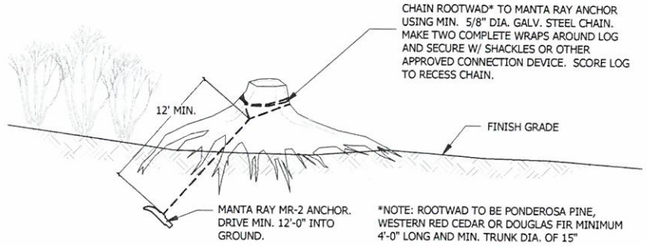
SCALE 0 10 20 40

FILE NO.



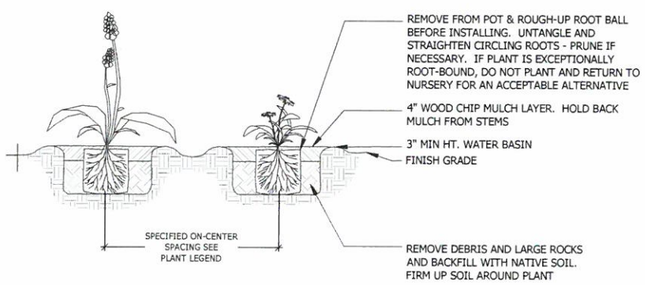
NOTES:
1. MAKE SUITABLE HOLE WITH A ROCK BAR OR EQUIV. PLANTING TOOL
2. INSTALL PLUG DIRECTLY INTO NATIVE SOIL
3. WHEN INSTALLED IN LARGE GROUPINGS, INSTALL CUTTINGS USING TRIANGULAR SPACING @ APPROX. 12" ON-CENTER

A EMERGENT PLANTING
NTS

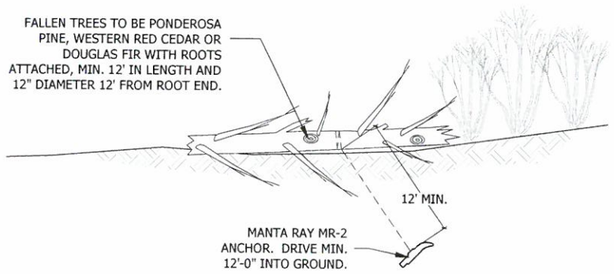


D ROOTWAD
NTS

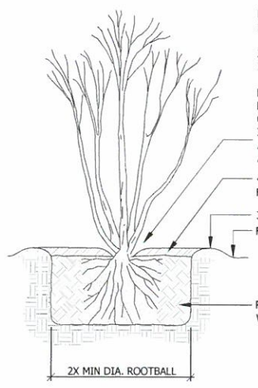
NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
3. SOAK PLANTING PIT AFTER PLANTING



B GROUNDCOVER & PERENNIAL PLANTING
NTS



E FALLEN TREE
NTS



NOTES:
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2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
3. SOAK PLANTING PIT AFTER PLANTING

REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. UNTANGLE AND STRAIGHTEN CIRCLING ROOTS - PRUNE IF NECESSARY. IF PLANT IS EXCEPTIONALLY ROOT-BOUND, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE

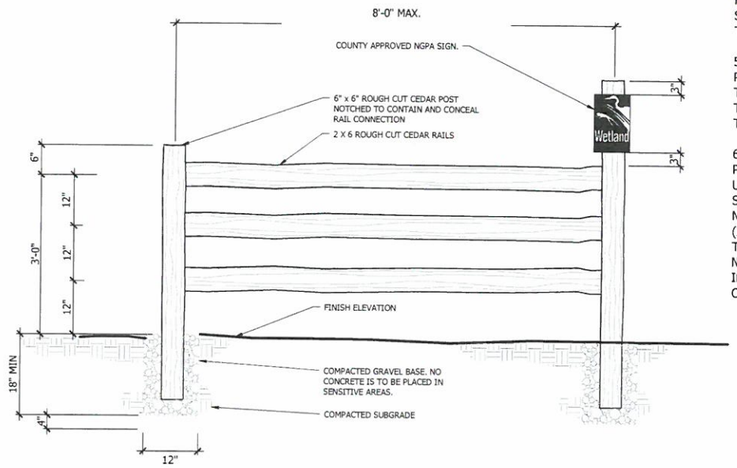
4" WOOD CHIP MULCH LAYER. HOLD BACK MULCH FROM TRUNK/STEMS

3" MIN HT. WATER BASIN
FINISH GRADE

REMOVE DEBRIS AND LARGE ROCKS AND BACKFILL WITH NATIVE SOIL. FIRM UP SOIL AROUND PLANT

2X MIN DIA. ROOTBALL

C TREE & SHRUB PLANTING
NTS



F SPLIT RAIL FENCE INSTALLATION
NTS

PLANT INSTALLATION SPECIFICATIONS

NOTE: THESE SPECIFICATIONS ARE A LEGALLY BINDING CONTRACT.

GENERAL NOTES

1. QUALITY ASSURANCE
PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF). TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUNSCALD WILL BE REJECTED.

NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

2. SUBSTITUTIONS
IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

3. INSPECTION
PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

4. SUBMITTALS
WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES. SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION. MAINTAIN COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

5. WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONSULTANT'S DISCRETION. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED.

6. PLANT MATERIAL
PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH. CONTAINER GROWN PLANTS (INCLUDES PLUGS) MUST HAVE INTACT ROOT BALLS WHEN REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

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LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

PLANTING SEQUENCE, NOTES, AND SPECIFICATIONS

L9.9 OF 11

SCALE

FILE NO.

Executive Summary

This mitigation plan was prepared to support improvements to the Sunset Beach area of Lake Sammamish State Park. The Washington State Parks and Recreation Commission (WSP) will be renovating a segment of the Sunset Beach shoreline. Work includes improving the existing swimming area with excavation and backfilling, ADA access via a concrete walkway and water-access ramp, a restored sand beach with boulders and woody debris, and a turf lawn area. This project involves in-water work and unavoidable wetland and wetland/lake buffer impacts. Project impacts and mitigation are summarized in Tables 1 and 2 below.

Table 1. Summary of Project Impacts

Critical Area	Activity	Impact area
Wetland D	Excavation & backfill	21,541 SF (0.49 acre)
Wetland buffer	Concrete paving	4,469 SF (0.14 acre)
Lake buffer	Concrete paving & retaining wall	1,539 SF (0.04 acre)
Direct lake impact*	Concrete ramp	326 SF (0.007 acre)

*Direct lake impacts documented on the mitigation plan total 69,368 SF of fill below the ordinary high water mark (OHWM): 52,994 SF in Zone 1 and 16,374 SF in Zone 2. This is temporary impact as discussed in the Assessment of the Impacts at the Development Site section below.

Mitigation for project impacts will occur on-site and will include the mitigation areas listed in Table 2 below. Temporarily disturbed buffer areas associated with new construction will be restored to pre-construction conditions.

Table 2. Critical area impact and mitigation summary

Critical Area Type (Name)	Impact Area	Mitigation Area	Mitigation Type / Location	Ratio
Wetland (Wetland D)	21,541 SF	21,580 SF	Wetland creation / North of Wetland D, Wetland F	1:1
		86,660 SF	Wetland enhancement / Wetlands C and F	4:1
Wetland buffer (Wetlands C and D)	4,469 SF	7,955 SF	Buffer creation and enhancement /New wetland creation areas	1.8:1
Lake buffer	1,539 SF	1,813 SF	Lake buffer enhancement / North of beach restoration area	1.2:1

Proposed Development Project

The Washington State Parks and Recreation Commission (WSP) plans to update recreation facilities at the Sunset Beach area of Lake Sammamish State Park. Park improvements addressed by this mitigation plan are the renovation of a segment of the Sunset Beach shoreline. Work includes improving the existing swimming area with excavation and backfilling, ADA access via a concrete walkway and water-access ramp, a restored sand beach with boulders and woody debris, and a turf lawn area. Consistent with the requirements of KCC 21A.25.140(B), the proposed project provides water-oriented public access and improves public safety of the popular access area.

The proposed project is located at Sunset Beach in Lake Sammamish State Park, on the southern shoreline of Lake Sammamish in Water Resource Inventory Area 8 (WRIA 8). The park is located at 5000 NW Sammamish Road, King County, WA 98027 (in Section 20, Township 24 North, Range 6 East; 47.55936 N Latitude, -122.06532 W Longitude). Tax parcel numbers are 2024069002 and 1724069005. Sunset Beach is bordered to the north and west by Lake Sammamish and to the south and east by the 512-acre Lake Sammamish State Park.

The project area is entirely within the mapped shoreline jurisdiction of King County. The shoreline area is designated as the Conservancy environment.

Assessment of the Impacts at the Development Site

The proposed beach restoration plan will affect wetland, wetland buffer, aquatic buffer, and aquatic areas. Approximate area measurements of unavoidable adverse impacts are provided in Table 2. These impacts are discussed individually in the following sections.

Table 3. Critical Area Impacts

Critical Area	Activity	Impact area
Wetland D	Excavation & backfill	21,541 SF (0.49 acre)
Wetland buffer	Concrete paving	4,469 SF (0.14 acre)
Lake buffer	Concrete paving & retaining wall	1,539 SF (0.04 acre)
Direct lake impact	Concrete ramp	326 SF (0.007 acre)

Wetland Impacts

A 21,541 square-foot area of Wetland D will be excavated and filled with beach sand as a part of the proposed project. Drainage patterns that presently contribute to wetland hydrology will be rerouted using subsurface drainage. These changes will result in the permanent removal of the wetland area.

Wetland D is a Category II lake-fringe wetland, which contains Palustrine forested, scrub-shrub, and emergent vegetation communities. Silty clay loam soils exhibit the Depleted Matrix (F3) hydric soil indicator; at the time of the wetland delineation study, wetland hydrology indicators were a High Water Table (A2) and Saturation (A3). As discussed above, the impacted area is characterized by shallow depressions along a uniform beach area with sparse herbaceous vegetation; it is a relatively degraded and low functioning portion of the total wetland.

Wetland Buffer Impacts

The wetland buffer consists predominantly of a sandy beach area with sparse herbaceous vegetation, as well as smaller areas of existing turf grass and an impervious path.

The only substantive wetland buffer impacts will be the installation of 4,469 square feet of impervious paths. The existing beach area will be excavated and replaced with beach sand. The replacement of substrate materials and removal of sparse herbaceous vegetation is not expected to have a significant effect on vegetative functions.

Aquatic Buffer Impacts

Existing lakeshore vegetation is very sparse within the project area outside of the proposed wetland impact area. Therefore, excavation and fill within the upland beach area will not affect hydrologic, vegetative, or water quality functions of the lake buffer area. An increase in 1,539 square feet of impervious path within the aquatic buffer (and outside of wetland buffer area) has the potential to affect hydrologic, habitat, and water quality functions; however, the actual impact of these changes is expected to be minimal given the surrounding environment and landscape setting.

The proposed project will also install a series of subsurface drains under the active beach area. Because the proposed beach is located amidst a large park area and over 400 feet from the nearest pollutant-generating impervious surface (parking area), it is not anticipated that this change will affect water quality in the lake. Furthermore, this change is not expected to affect the hydrology of the lake because the lake level is controlled by the static lake elevation.

Direct Aquatic Impacts

Temporary Impacts

Excavation and fill, both in-water and along the shore, have the potential to generate temporary turbidity. To minimize construction impacts associated with increased turbidity and the potential to release toxic chemicals during construction, timing restrictions and erosion and turbidity minimization measures will be implemented.

Sediment removal and placement may cause local reduction or alteration in the benthic or epibenthic invertebrate community at the site during the first outmigration season following construction. However, with the exception of the area under the access ramp, recovery of the benthic community is expected by the following year based on past studies of invertebrate response following dredging (Carline and Brynildson 1977 in Peterson 1981, Harvey and Lisle 1998, McCabe 1996). Benthic and epibenthic invertebrates have not been found to be a limiting factor for juvenile Chinook salmon diets in Lake Washington (Koehler et al. 2006), and they are not expected to be a limiting factor under the similar conditions of Lake Sammamish. Therefore, the project effects on benthic and epibenthic invertebrates in Lake Sammamish are expected to be temporary and insignificant.

Long-term Impacts

The long-term impacts of the project on Lake Sammamish are expected to result in a net benefit for ecological functions.

The project will remove invasive Eurasian milfoil and grade the shoreline to extend the area of shallow water, which provides a larger area of preferred shallow water rearing for salmonid fry (particularly juvenile Chinook salmon).

By removing milfoil at the site prior to the project and subsequently on an annual basis, the proposed project will maintain or improve water quality conditions in Lake Sammamish.

The project will shrink the area of high impact activities within the lake by reducing the size of the swimming area. Floating logs attached to concrete anchors by chain will be used as floating breakwaters to minimize waves and boat wakes within the swimming area, and this will result in a minor increase in over-water cover.

The proposed project will result in a net increase of 64 cubic yards of dry storage flood capacity (between 29.6 and 35 feet NAVD88). Because the elevation of Lake Sammamish is controlled by a static lake elevation, the project will not affect flood conveyance or flood elevations (Northwest Hydraulic Consultants 2012). There will be a net increase in fill volume below the lake outlet elevation, but this will not have a perceptible impact on flood conditions within Lake Sammamish (Northwest Hydraulic Consultants 2012). Therefore the effects of the proposed project on flood levels and conveyance are insignificant.

Mitigation Approach

Mitigation Sequencing

Mitigation sequencing was implemented as required under KCC 21A.24 and 21A.25. Under the proposed project, impacts would be first avoided, second minimized, then existing conditions improved or maintained, and lastly unavoidable critical area impacts would be mitigated. Any mitigation areas will be monitored and adaptively managed to ensure success.

Avoidance: Given the extent of lake-fringe wetlands in the Sunset Beach area and the in-water restoration goals, a complete avoidance approach is not feasible for this project. The existing sandy beach area which provides access to the lake is approximately 800 feet long. The improved swim beach proposed with this phase will be approximately 530 feet long. The majority of the beach restoration area is sited outside of the nearest lake-fringe wetland, Wetland D. Since Wetland D is centrally located directly in front of existing beach infrastructure, complete avoidance of wetland impacts is not practical. Relocating the swimming beach to the north was not deemed feasible from a public access or safety perspective.

Minimization: In general, proposed Sunset Beach area improvements minimize wetland, buffer, and lakeshore impacts by utilizing existing structural footprints and heavily trafficked recreation areas.

The proposed project minimizes wetland and buffer impacts by focusing the project on an existing swimming beach. Where the wetland extends within the existing active beach area, only a portion of the wetland that consists of sparse, simple vegetation with lower functions was included in the project area. By focusing on an existing active use area, the project avoids impacts to any shrubs or trees or areas of undisturbed vegetation.

Impacts to the lakeshore are minimized by focusing the project on an existing swimming beach and reducing the active recreation area compared to the existing condition. Additionally, the project limits the use of impervious surfaces within the wetland and aquatic buffers to the minimum necessary to accommodate ADA access and the high level of public use.

To minimize impacts of proposed in-water improvements, Agency-approved work window restrictions will be followed. Following a work window will reduce effects on aquatic fauna, and specifically on listed salmonids. The work window typically includes the period from July 16 to July 31 and the period from November 16 to December 31. However, under KCC 21A.24.365 B, grading for allowed alterations in aquatic area buffers is only allowed from May 1 to October 1, except in marine shorelines to avoid conflicts with forage fish or migrating salmonids. Although the code does not specify that alterations in timing may be acceptable on freshwater shorelines outside of the summer timeframe, it is suggested that such an allowance be made if work is conducted in the winter in-water work period to minimize the total duration of impacts to aquatic resources.

To minimize buffer area impacts, topsoil disturbance and compaction will be limited to maintain infiltration functions in accord with KCC 21A.24.365(C).

Improvement and Maintenance: Proposed in-water work improves conditions within the project area by removing milfoil prior to project implementation, as well as on an annual basis thereafter. Milfoil removal will follow King County Noxious Weed Control Best Management Practices (King County, electronic reference) for milfoil removal, including annual follow-up milfoil removal. Maintenance crews will be required to properly dispose of all removed milfoil at an upland site, so it cannot reenter a waterbody.

Mitigation:

Wetlands and Aquatic Buffer Mitigation

As discussed above, the proposed beach restoration will cause unavoidable wetland and buffer impacts. Wetland impacts will be offset through a combination of wetland creation, wetland enhancement, wetland buffer enhancement, and lake buffer enhancement. Project impacts and proposed mitigation are summarized in the table below.

Table 4. Critical area impact and mitigation summary

Critical Area Type (Name)	Impact Area	Mitigation Area	Mitigation Type / Location	Ratio
Wetland (Wetland D)	21,541 SF	21,580 SF	Wetland creation / North of Wetland D, Wetland F	1:1
		86,660 SF	Wetland enhancement / Wetlands C and F	4:1
Wetland buffer (Wetlands C and D)	4,469 SF	7,955 SF	Buffer creation and enhancement /New wetland creation areas	1.8:1
Lake buffer	1,539 SF	1,813 SF	Lake buffer enhancement / North of beach restoration area	1.2:1

The Lake Sammamish State Park Wetland, Stream, and Lakeshore Restoration Plan (The Watershed Company 2005) assessed mitigation and restoration opportunities throughout Lake Sammamish State Park including the Issaquah and Tibbetts Creek drainages. Several of the projects identified in this report have been implemented by Washington State Parks and Mountains to Sound Greenway Trust. The proposed mitigation draws upon and compliments the LSSP restoration plan and master planning efforts.

In 2009, a critical areas mitigation plan was prepared for improvements to the Sunset Beach area of Lake Sammamish State Park (The Watershed Company, April 2009). This plan included impact analysis and mitigation for a proposed boardwalk, bath house, and fire lane. The boardwalk was constructed in 2013; the bath house and fire lane are planned to be constructed in 2014. To preserve mitigation identified for those planned improvements, a new mitigation plan was prepared for the beach restoration project.

As summarized in Table 4 above, the proposed mitigation meets or exceeds the mitigation ratios recommended by the state department of Ecology.

Aquatic Area Mitigation

King County Code 21A.24.380(A) requires that in aquatic areas, mitigation must achieve equivalent or greater aquatic area functions related to habitat, hydrologic, and geomorphic functions. As described above, because the proposed project is expected to have a net benefit on aquatic resource functions, no additional mitigation is proposed. Specifically, removal of milfoil and re-grading of the nearshore area to expand shallow water habitat will result in a net improvement of functions. These actions proposed over a 60,000 square-foot area are believed to be sufficient to account for the permanent adverse impact resulting from an alteration of sediment transport and macro-invertebrate production in the 326 square-foot area of the proposed concrete access ramp. Therefore, no additional aquatic mitigation is proposed.

Proposed Mitigation Site, Existing Conditions

All mitigation will occur within the Sunset Beach area of the Lake Sammamish State Park. The 43-acre Sunset Beach area lies between Issaquah Creek and Tibbetts Creek. It is a recreation area within the 512-acre park, which is busiest during the summer months. As documented in the Wetland and Stream Delineation Study Lake Sammamish State Park Sunset Beach (The Watershed Company 2009), seven wetlands were identified in the project vicinity. Open lawn areas, including mowed lawn wetlands (Wetlands B, C and F), are used for picnics and free play. The current swim beach spans approximately 800 lineal feet of lakeshore and includes a degraded portion of Wetland D. Seasonal fluctuations in the ground water table and lake level are the primary sources of hydrology for these wetlands. Critical area ratings and buffers are summarized in the table below.

Table 5. Mitigation site critical areas, ratings, and buffer widths.

Critical Area	Classification	Habitat Score	High Impact Buffer
Wetland C	Category IV	12	50 feet
Wetland D	Category II	20	125 feet
Wetland F	Category IV	12	50 feet
Lake Sammamish OHWM	Type S	N/A	165 feet

Mitigation Site Plans / Design

Washington State Parks (WSP) seeks to improve public safety in the swim beach area and revitalize this portion of the park. Striking a balance between their commitment to environmental stewardship and dedication to outdoor recreational, WSP plans to reduce the active swim beach area and further enhance surrounding wetland and shoreline habitats. This will result in a more clearly defined active recreation zone and limit intrusions into adjacent natural areas.

The mitigation plan aims to enhance and expand nearshore habitat for fish and seasonal ponds for amphibians. Buffer restoration and wetland enhancements are also designed to benefit local fauna, including birds and small mammals.

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DRAWN	MD	02/09/15
CHECKED (FIELD)		
CHECKED (HDQTS.)		

PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

MITIGATION NOTES AND SPECIFICATIONS

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FILE NO.

Goals and Performance Standards

Goals

1. Improve nearshore habitat below the ordinary high water mark within the Sunset Beach project area.
   a. Increase shallow water rearing area for salmonid fry
   b. Remove invasive Eurasian milfoil
   c. Place large woody debris in the nearshore, outside of the designated swim area
2. Replace lost wetland area through wetland creation at a 1:1 mitigation to impact ratio.
   a. Establish a native plant community and wetland hydroperiod(s)
3. Improve water quality function in wetland and wetland/lake buffer areas proximate to the beach restoration project area.
   a. Establish a native plant community
   b. Increase complexity of wetland microtopography
4. Improve habitat for songbirds, small mammals and invertebrates.
   a. Increase native plant density, diversity and interspersion
   b. Create seasonal ponds for native amphibians
   c. Place large woody debris with the wetland mitigation area.

Performance Standards

The standards listed below shall be used to judge the success of the plan over time.

1. Survival: Achieve 100% survival within all planting areas of installed container plants by the end of Year 1 (to be guaranteed by the contractor acquiring and installing the plants); and 80 percent survival standard at the end of Year 2, with additional planting if these standards are not met. This standard can be met through plant establishment or through replanting as necessary to achieve the required numbers.

2. Vegetation cover:
   a. In areas planted with woody vegetation: Achieve 60% cover of native trees and shrubs by Year 3. Volunteer species may count towards this cover standard. Achieve 80% cover of native trees and shrubs by Year 5. Volunteer species may count towards this cover standard.
   b. In areas planted with emergent vegetation: Achieve 40 percent cover by the end of Year 3 and 60 percent by the end of Year 5.
3. Species diversity:
   a. Buffer enhancement areas: Establish at least 3 native tree species, 4 native shrub species and 2 native groundcover or herbaceous species by Year 5. Volunteer species may count towards this standard.
   b. Wetland enhancement and creation areas: Establish a hydric plant community of at least 2 native tree species, 2 native shrub species, and 3 native emergent species. The combination of installed and volunteer plants shall have a wetland indicator status of FAC or wetter.
4. Invasive cover: Weedy cover by species listed by the Washington State Noxious Weed Board as Class A, Class B, or Class C weeds may not exceed 10 percent coverage within the mitigation areas in any monitoring.
5. Large woody debris (LWD):
   a. LWD will remain anchored within the north wetland creation area throughout the monitoring period.
   b. At least 25 pieces of LWD will remain within the mitigation area and maintain good ground contact throughout the monitoring period.
6. Seasonal ponds: Ponds should dry out in summer during years of normal rainfall.
7. Hydrology standard (Wetland Creation Areas only):
   a. Evidence of wetland hydrology in Wetland Creation Areas: Soil saturation, within the upper 12 inches of the soil surface, present for two consecutive weeks during the growing season (March 1st to October 15th) during each monitoring year.

Monitoring Plan

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which it is meeting the performance standards outlined elsewhere in this document.

An as-built plan will be prepared by the monitoring **restoration specialist** prior to the beginning of the monitoring period. The as-built plan shall be a mark-up of the planting plans included in this plan set. The as-built plan will document any departures in plant placement or other components from the proposed plan.

During the as-built inspection, the monitoring **restoration specialist** shall establish monitoring stations. Approximate monitoring stations and photo-point locations shall be marked on the as-built plan.

To monitor wetland hydrology in the wetland creation areas, the restoration specialist shall install two representatively located shallow groundwater wells in the Wetland Creation Areas. Groundwater wells shall be installed to a minimum depth of 24 inches. Wells to be constructed of 2-inch PVC pipe with caps. Below ground portions are to be perforated with ¼" holes spaced no farther than ½" apart. Depth of groundwater below the soil surface shall be recorded at established wells.

Vegetation monitoring shall take place at least twice annually for five years. During each year there shall be a spring and a late summer or fall visit. Depending on the timing of plant installation, first-year monitoring should commence in the first spring or first summer subsequent to installation.

Hydrology monitoring shall take place once per week from March 1st through May 1st or until the wetland hydrology standard is met. This hydrology monitoring will be conducted during each monitoring year.

The spring monitoring visit will record maintenance needs such as plant replacement and weeding needs. Following the spring visit the **restoration specialist** will notify the park ranger and/or maintenance crews of necessary early growing season maintenance. The second annual monitoring visit will contain the bulk of the site assessment and will take place in the late summer or early fall. The late-season formal monitoring visit shall record and report the following in an annual report submitted to King County and the Corps.

1. General summary of the spring visit.
2. First-year counts of dead trees and shrubs by species in the planted areas.
3. Counts of dead plants where mortality is significant in any monitoring year.
4. Estimate of native sapling tree and shrub cover using the line-intercept method along transects or visual cover class estimates in the planted areas.
5. Estimate of woody invasive cover using the line-intercept method along transects or visual cover class estimates in the planted areas.
6. Estimate of herbaceous invasive weed cover using the cover class method site-wide.
7. Photographic documentation from fixed reference points in each planting area.
8. Documentation of seasonal ponding and wetland hydrology observations.
9. Intrusions into the planting areas, vandalism or other actions that impair the intended functions of the planted areas.
10. Recommendations for maintenance or repair of any portion of the mitigation area.

Construction Notes and Specifications

Note: specifications for items in **bold** can be found below under "Material Specifications and Definitions."

Note: The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects, shall monitor:

1. All site preparation
   a. grading and soil preparation.
   b. milfoil removal
2. Plant material inspection
   a. plant material delivery inspection.
   b. 50% plant installation inspection.
   c. 100% plant installation inspection.

General Work Sequence

1) Contractors shall identify all underground utilities and shall be responsible for any damages and repairs.
2) Install temporary erosion control measures per TESC plan (L8.1). Contractors shall operate at designated construction access and staging areas.
3) Remove and properly dispose of milfoil before placing fill below the lakeshore (OHWM).
4) Rough grade the wetland creation and enhancement areas according to approved grading plan and as directed by the **restoration specialist**, being careful to avoid trees or other desirable native vegetation where possible. The **restoration specialist** may alter depths to be locally deeper or shallower as field conditions dictate.
5) Once a satisfactory sub-grade is achieved and approved by the **restoration specialist**, decompact soil by tilling top 8" of soil, then incorporate 4" of **compost** (wetland creation area only) to achieve a minimum organic content of 30% (approximately 266 cubic yards of **compost**).
6) In wetland buffer and wetland enhancement areas that will not be graded, first, strip off grass layer, next, decompact soil by tilling top 8" of soil, then incorporate 4" **compost** (approximately 1,190 cubic yards).
7) Within one week of grading acceptance by the **restoration specialist**, stabilize all graded and de-compacted areas in accordance with TESC plan (L8.1).
8) Install all **large woody debris** habitat structures per plan and details. Locations can be adjusted in the field at the direction of the **restoration specialist.**
9) All plant installation except emergent plants shall take place during the dormant season (October 15th to March 1st). Planting of emergent species shall take place during March 1st through June 15th. The **restoration specialist** may approve planting outside of these times based on weather conditions during the planting period.
10) Lay out vegetation to be installed per the planting plans and plant schedule.
11) Prepare a planting pit for each plant and install per the planting details.
12) Install mulch around the base of all installed plantings, except for emergents, with **wood chip mulch**, four inches thick and to a diameter of 18 inches. Mulch should not touch the plant stems. 145 cubic yards will be required.
13) Install a temporary irrigation system capable of supplying one inch of water per week to all plants in the mitigation areas from June 1st through September 30th for the first two years following installation. Contractors shall provide bidder-designed irrigation system for review and approval by the **restoration specialist.**

Material Specifications and Definitions

1) **Compost:** Cedar Grove Compost or equivalent product. 100% vegetable compost with no appreciable quantities of sand gravel, sawdust, or other non-organic materials. Approximately 1,457 cubic yards required.
2) **Fertilizer**: Slow release, granular PHOSPHOROUS-FREE fertilizer. Follow manufacturer's instructions for application. Keep fertilizer in a weather-tight container while on site. Note that fertilizer is to be applied only in Years 2, 3, 4 and 5 and not in the first year.
3) **Restoration Specialist**: The Watershed Company [(425) 822-5242] personnel, or other persons qualified to evaluate environmental restoration projects.
4) **Wood chip mulch**: "Arborist chips" (chipped woody material) approximately 1 to 3 inches in maximum dimension (not sawdust or coarse hog fuel). This material is commonly available in large quantities from arborists or tree-pruning companies. Mulch shall not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris. Quantity required: approximately 145 cubic yards.
5) **Large Woody Debris (LWD):** Logs and rootwads shall conform to the minimum diameter specified in the details and shall be of a western redcedar (preferred), ponderosa pine, or Douglas-fir species. The log diameter shall be measured 12' from the base end of the log. **Large woody debris** shall be sound, free of rot, insect damage, or any preservative such as creosote.
6) **Marsh Native Seed Mix:** This native wetland seed mix should contain the following species in the specified percentages:

CAREX OBNUPTA	SLOUGH SEDGE	27%
CAREX STIPATA	AWL SEDGE	30%
ELEOCHARIS PALUSTRIS	CREEPING SPIKE RUSH	15%
SCIRPUS MICROCARPUS	SMALL FRUITED BULRUSH	18%
JUNCUS TENUIS	SLENDER RUSH	10%

Maintenance Plan

The site will be maintained for five years following completion of the construction. Note: specifications for items in **bold** can be found above under "Material Specifications and Definitions."

1. Replace each plant found dead in the summer monitoring visits during the upcoming fall dormant season (October 15th to March 1st).
2. Follow the recommendations noted in the spring monitoring site visit.
3. General weeding for all planted areas:
   a. At least twice-yearly, remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
   b. More frequent weeding may be necessary depending on weed conditions that develop after plan installation.
   c. Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.
4. Apply slow release granular **fertilizer** to each installed plant annually in the spring (by June 1) of Years 2 through 5. Do not fertilize plants when inundated or submerged.
5. Mulch the weeded areas beneath each plant with **wood chip mulch** as necessary to maintain a 4-inch thick mulch ring and keep down weeds.
6. The Washington State Parks and Recreation Commission or the on-site Park Ranger shall ensure that water is provided for the entire planted area with a minimum of 2 inches of water provided per week from June 1 through September 30 for the first two years following installation.

Site Protection

The site will remain under Washington State Parks ownership. Paths and signage will direct people to areas of active recreation.

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PROJECT ENGINEER

WASHINGTON STATE PARKS AND RECREATION COMMISSION

LAKE SAMMAMISH STATE PARK

LAKE SAMMAMISH BEACH RESTORATION

MITIGATION NOTES AND SPECIFICATIONS

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SCALE

FILE NO.